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Therapeutic Gazette.

Old Series, Vol. VI. | Detroit, July 16, 1883. | New Series, Vol. IV. No. 7

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Original Department.

A Clinical Study of the Action and Uses of Caffeine and Convallaria Majalis as Cardiac Tonics.

By Beverley Robinson, M. D.,* New York City.

UNTIL very lately many of us were accustomed to regard digitalis as the essential, nay almost the only real stimulant, or tonic of the heart. True it is, we consider alcohol a powerful general stimulant, and incidentally recognize that it gives the heart renewed power.

In ether and ammonia, we have, also, diffusible stimulants of considerable value, but their action is evanescent and is not to be relied on, if a continued or specific effect upon cardiac contractility is required.

In iron, quinine and nux vomica, or its alkaloid, strychnine, we have three very powerful corroborants. They restore appetite, make blood of better quality, add to muscular vigor, and rehabilitate in a notable degree the general system. At the same time they strengthen and regularize cardiac pulsations, but this latter result is obviously only a part, though at times an important one, of their general influence for good.

In coca, also, we have a powerful stimulant to the economy that frequently will strengthen, or give tone to the nerves in a rapid manner, that no other drug with which I am familiar, can accomplish.*

In belladonna, we have, however, the only drug which has hitherto seemed to me ever to take the place, even in a moderate degree, of digitalis in its direct tranquilizing, and at the same time strengthening effect, upon the heart. But belladonna appears to influence, especially, the cardiac plexuses and the intra-cardiac ganglia, and not to give immediate power to cardiac muscular fibre as digitalis does. In severe collapse,† resulting from inflammation and other diseases of abdominal organs, and especially in cholera, we have learned to admit its very great value, and how much benefit we may derive from its timely exhibition, but in acute or chronic heart disorders of the kind we encounter habitually, belladonna must not be relied upon to the exclusion of digitalis. As an adjunct in a prescription to give tone and power to the heart, it should be judiciously employed, and frequently we shall recognize manifest good effects resulting from its use. Even when employed alone, I have observed a number of cases in which palpitations were diminished, and the cardiac pulsations rendered more regular and stronger. But once let the heart commence to fail evidently in

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* I have repeatedly felt this effect of Mariani's wine of coca on myself, when extremely fatigued from overwork or want of sleep. The wine of Mariani is, I believe, one of the best preparations, on account of the great care exercised by its maker.

† Philadelphia Med. Times, Feb. 2d, 1878, p. 198.

its rôle as an ever-acting force pump; should its cavities dilate never so little; should secondary hypertrophic compensation following organic lesion of valves, or orifices begin to fail; should co-ordinate nerve control by the vagi, the sympathetic, or the intra-cardiac ganglia, be manifested by obstinate or excessive palpitations, quiverings, irregularities, or intermittences in the beats, and at once we would recur, whatever else we do, to the internal use of digitalis in small, or large, rare, or frequently repeated doses. Very often it would help us in our time of need, help us as possibly few medicinal agents ever will, to give strength and regularity to the circulatory function, when it was fast showing signs of weakness and asystolism. Occasionally, however, we are disappointed in its employment; it has been unable to respond to our anticipations of its good work, and where we had relied most confidently, there we were soon prepared to acknowledge we had encountered disappointment. Possibly on this account we were glad to welcome any drug, or drugs, which should fill a lacuna already appreciated. Or even if we doubted that a gap could be made whole, we were pleased to know that there were other remedies of value in cardiac therapeutics than those to which we have referred. Be that as it may, within the past year, three new drugs have claimed our attention as cardiac tonics: The first is caffeine; the second convallaria majalis, or its glucoside, convallamarin; and the third, nitro-glycerine.* It has seemed to me profitable, even at this early date, to present to a body of busy practitions something of what is actually known in regard to the nature, action and uses of these three agents, and also, to accompany my remarks with records of some personal cases and the obvious deductions which can be made from them.†

Caffeine, or citrate of caffeine, as it is improperly termed,‡ is no new remedy. For a long time its diuretic action has been familiarly known, but not until the labors of Gubler, Lewis Shapter and Leech was the attention of the medical profession specially directed to it as a cardiac tonic and regulator. Since the contributions of Gubler, various articles have appeared in which its action in this direction, or in promoting diuresis, has been most favorably spoken of. A valuable study in the Edinburgh Medical Journal,* by David J. Brakenridge, "On the Action and Uses of Citrate of Caffeine as a Diuretic;" another by Lépine in the Lyon Medicale;† a third by Huchard in the Bulletin Général de Therapeutique;‡ and a fourth by Milliken (F. H.) in the Philadelphia Medical Times, and entitled, "Citrate of Caffeine in Cardiac Dropsy,"¶ form the sum of what has been hitherto discovered in regard to the clinical employment of this drug. All of these writers recognize in caffeine a useful and valuable addition to our therapeutic arsenal. As a cardiac tonic, Lépine considers it, with somewhat different merits, the equal of digitalis. Huchard does not bestow such high praise as this, but is willing to agree that when digitalis fails to produce beneficial effects, we shall act wisely in turning to caffeine in the hope of obtaining relief for our patient. Caffeine in moderate doses at first slows the heart;§ afterwards the cardiac pulsations are prone to become more rapid. In the beginning the cardiac beats are stronger and more regular. This effect may be kept up for quite a long time, or ultimately may be lost in part. Its action on the respirations is not so evident. However, it appears to make them deeper and of longer duration. Its influence over dropsy is very great at times; again, it is quite inert in this regard. Whenever the dropsy is dependent simply upon cardiac failure, caffeine invariably increases the secretory function of the kidneys; the quantity of urine passed in a given time is very largely augmented, and in a corresponding degree the infiltration of tissues subsides. Whenever the anasarca is an expression of acute parenchymatous renal degeneration, caffeine has no diuretic action whatever. It would seem that this action belongs, in caffeine, to its direct influence upon the glandular renal epithelium and is not exerted through the vessels of the kidney. Brakenridge has, indeed, shown by several reported cases, that in the early stages of acute parenchymatous nephritis the diuretic action of caffeine was completely nil. At a later stage of this affection it not only increased the quantity of water eliminated by the urine, but also notably augmented the excretion of urea and other urinary solids. The quantity of urea excreted was particularly and greatly increased whenever its eliminated quantity in a given time had fallen short of the normal amount before caffeine was taken. Brakenridge, however, has become convinced that digitalis and caffeine are complimentary of one another in their diuretic action, and further, that when given at the same time they exert a far more powerful diuretic action than when given each drug by itself. This is fully explained by the well-known fact that digitalis acts as a diuretic by increasing blood pressure in the general and local arterial system as well as by increasing the amount of blood-flow in a given time

* This drug is administered under the name of liquor glonoin, which is a solution of nitro-glycerine of such strength that one drop represents one one-hundredth grain nitro-glycerine, the usual dose, to be cautiously increased according to circumstances.

† I had at first intended to make a tolerably complete study of nitro-glycerine and approximate the action of this remedy with that of caffeine and convallaria. Unfortunately my cases, with two exceptions, have not hitherto seemed to require its use, and I am now obliged to present my paper before you without completing it in this regard, as I so much desired. I will simply add for those who may for the moment fail to recollect these facts, that nitro-glycerine was discovered by M. Sobrero in 1847, and further investigated by Railton and De Vrij. It has been recommended for various forms of nervous diseases by A. G. Field, M. D., of St. George's Hosl pital, London, and brought to the attention of the medica- profession in New York by Dr. Wm. A. Hammond, who says of its therapeutical uses, "from the action of nitro-glycerine it is to be expected that the drug would be of value in those instances in which it was desirable to stimulate the circulation and increase the amount of inter-cranial blood."

‡ In this connection I would state that in a written communication to me from Chas. Rice, Esq., Pharmacist to Bellevue Hospital, in date of Nov. 17, 1882, it is affirmed that there is no chemical combination of a permanent character known as citrate of caffeine. What is sold under this name is usually nothing but caffeine. In some rare cases where citrate of caffeine has been asked for, the dispenser has simply made a combination of very temporary nature, between citric acid and caffeine, in order to supply a demand, which is probably an expression of ignorance in regard to the essential nature of the drug called for.

*July and August, 1881.

†Juillet, 1882.

‡30 Août, 1882.

¶February 25, 1882.

§According to Huchard, caffeine renders the cardiac action more rapid at first.

through the kidneys. Caffeine, on the contrary, has an elective action upon the secretory power of the glandular renal epithelium, and their secretory power is at times very much augmented without the slightest increase being manifested in the blood pressure, and when the radial pulse-beat is rapid, feeble and depressible, not to say quite irregular. It is proper to remark here, that it is only with doses larger than Brakenridge employs that Lépine, notably, pretends to get the therapeutic effects of caffeine upon the heart action in the way of slowing and strengthening it. Over digitalis, caffeine has certain evident advantages:

1. It has no tendency to cumulate in the economy and hence to occasion poisonous effects.*

2. It acts with greater rapidity than digitalis. In certain cases of asystolism, when life is imminently endangered, this property may be of great value.

3. It rarely or never disagrees with the stomach, when it has diuretic effects, or in any way causes symptoms of a dyspeptic character. This may and probably does depend in a large measure upon its rapid and easy elimination from the body, especially through the kidneys, unless acute parenchymatous nephritis be present. Its disadvantage, in certain instances, is to stimulate the brain too actively and thus to occasion persistent wakefulness and other nervous symptoms. Moreover, its cost is very considerable. To be effective, it must be given in relatively large doses from the beginning.† Six grains a day is the smallest amount that will show any special elective action, and this amount may be rapidly increased to 20, 25, 30, or in very exceptional instances, to 35 grains a day. It should be given in capsule, or mixture with syrup of orange, or some other agreeable vehicle. It should be given, also, in divided doses, so that its action may be continuously kept up and not cause stomachal rejection. As I have already stated, it is rapidly eliminated from the economy. Tanret has given a formula for its hypodermic use, and vaunted its exhibition after this method.‡

Personally I have given caffeine to the following cases with good results:

Case 1.—A young woman, about 25 years of age, in the fourth week of a tolerably severe case of typhoid fever. At that time the temperature in the axilla was still 103 degrees Fahr. in the evening. The bowels were moderately loose, the heart beats were extremely feeble, muffled and somewhat distant; the pulse was dicrotic, depressible and irregular; there was marked adynamia, with dry, rather brown tongue on dorsum and a condition of cerebral apathy very marked. In fact, the patient was usually in a semi-somnolent state from which she was aroused not without addressing her remarks very forcibly and in an elevated tone. She was taking 12 ounces of brandy in the 24 hours, and 10 grains of quinine. The brandy was dropped to six ounces, the quinine suppressed, and two grains of caffeine were given every two hours in mixture. This medication was only continued two or three days. During that time the pulse became decidedly stronger and more regular, the cardiac pulsations more forcible and the patient awakened from her condition of previous lethargy. The effects of caffeine on the urine in this case were not noted.

Case 2.—*Diagnosis:* Cardiac hypertrophy; aortic stenosis. C. S., single, waiter, mulatto.

October 17, 1881.—Complains of tightness over the chest anteriorly since yesterday; looks pale and somewhat jaundiced; constipated.

Physical Examination: Reveals considerable hypertrophy of the heart, with well-marked, rather harsh blowing murmur at the base accompanying the first sound.

℞ Pil. podophyll. co.

(Gr. ¼ podophyllin in each pill.)

S. One pill to be taken every night.

℞ Tinct. belladonnæ,
Tinct. nucis vomicæ, ăā gtt. ij,
Mist. potass. citratis, ʒ ss.

M. S. Take every six hours.

October 24, 1881.—Has annoying cough.

℞ Mist. glycyrrhiz. co., ʒ ij,
Sp. chloroformi, ʒ ss.
Sp. ammonii aromat., ʒ j.

M. S. A teaspoonful every two hours.

October 20, 1882.—Complains of constricted feeling over the chest in front. On applying ear to the thorax I am able to distinguish the same kind of blowing murmur as heard one year previously.

℞ Caffeine, gr. ij.

S. Take in capsule every four hours.

October 26.—Took medicine during four days. Pain in chest disappeared. He felt slight pain over hip and left side. Caffeine increased bulk of urine in a marked degree; did not remark that it made him breathe more easily.

Case 3.—*Aortic Stenosis. Frequent Attacks of Vomiting:* Mrs. K., widow, 60 years of age, suffering from repeated attacks of nausea and vomiting during several years. The cause of these attacks was undetermined. At first it was thought they were occasioned by a simple catarrhal gastritis which itself was under the dependence of errors of diet, mental anxiety, and excessive fatigue on the part of one with a feeble constitution. This hypothesis was found to be erroneous, inasmuch as treatment instituted from this point of view proved but temporarily serviceable at any time. Usually it was of no use whatever. The urine was examined repeatedly, but no abnormal change could be found which could lead any one to suspect disease of the kidneys. A slight error of refraction, due to age, was rectified by wearing suitable glasses. Aortic stenosis was discovered, and as heart action was weak, small doses of digitalis were prescribed. No good effects followed either as regards the action of the heart or stomachal troubles.

*Of course I refer here to ordinary, or even large doses, relatively, of caffeine. On one occasion, last summer, I was called to see a lady who, after taking by mistake, as much as a teaspoonful of caffeine, showed evident signs of poisoning. These signs were great mental excitement, unequal action of the heart and cold extremities, followed soon by prolonged wakefulness, not influenced much by moderate doses of opium.

†This is Lépine's and Huchard's opinion. Brakenridge, on the contrary, affirms he can get all the diuretic effects possible by giving grs. iij, doses t. d. s., in pill, or solution.

‡The ordinary preparations of caffeine are unsuitable for hypodermic use on account of their slight solubility in water. Owing to an analogy which exists in coffee where caffeine is found as a double salt of caffeine and potassium combined with an acid resembling salicylic acid, Tanret was led to make a combination between caffeine and salicylate of soda. The salicylate contains 61 per cent. of caffeine, and has been injected subcutaneously without causing the slightest irritation.—*Medical Record*, Jan. 6, 1883, p. 9.—*Schmidt's Jahrbücher*, No. 7, 1882.

October 20, 1882.—Constant nausea during several days past. Two attacks of vomiting with rejection of the entire contents of the stomach.

October 21.—Three vomiting attacks in the afternoon; pulse weak; no irregularities or intermittences; depressible; no perceptible murmur at heart; rather slow, feeble action.

October 22.—

℞ Caffeine, gr. ij.

S. Take every four hours.

October 28.—Has not had another attack of vomiting or any feeling of nausea; second night after use of remedy had noises in the head which resembled the escape of steam from a boiler; no increase in quantity of urine; noises in head did not repeat themselves on October 25th; felt stronger and better since that date.

On October 27th did not take caffeine.

To-day (Oct. 28th) moderate rough bruit at base of heart, synchronous with first sound. Heart action more forcible; pulse somewhat less depressible, although not yet of normal strength.

Note—Case seems to be one of recurrent and periodic attacks of vomiting, probably due to congestion of stomach, secondary to chronic cardiac disease. (Aortic stenosis.)

November 23, 1882.—Has been taking two-grain capsules of caffeine every two hours (?) and has not had an attack of vomiting in two weeks.

Case 4.—*Asystolie:* Treated at different times with caffeine, digitalis and convallaria; no pronounced abnormal murmur generally; improvement. (Careful notes taken during two months.)

Mrs. W. M., widow, 49 years of age. Complains, for several years, of palpitations and shortness of breath on slight exertion. A thin, spare woman, mother of several grown children, a school-teacher by profession. Last winter (Dec. 1881) I treated her for an obstinate attack of bronchitis which lasted several weeks, and seemed to be kept up partly by deficient heart power. Improved and got finally well, by the repeated use of belladonna, nux and digitalis in small doses, several weeks continued. Has been well during past summer.

October 20, 1882.—About three weeks ago taken with more oppression than usual, and was unable to rest quietly at night on account of dyspnœa. Considerable anasarca at that time, of trunk and lower limbs. Again improved on small doses of digitalis. Finding her condition after a few days not as much improved as I desired, viz.: although œdematous condition had in part disappeared, she complained still of short breathing and restlessness at night. Moreover there was insufficient excretion of urine, not more than 1 pint in 24 hours; no albumen; normal specific gravity. I put her (Oct. 16) on 2 grains caffeine every two hours with a little syrup and aq. menth. pip.

October 9, 1882.—I found heart action stronger, less rapid, and more regular in rhythm. (There was no murmur now or before, properly speaking, although the first sound was prolonged and not as clear as normal.) Pulse weak 90 per minute; urine far more abundant; rests better; less dyspnœa; œdematous swelling of body almost disappeared; appetite still very poor; repeat caffeine 2 grains every 4 hours.

October 14, 1882.—Still continues better; last two days only taken 3 or 4 doses in 24 hours.

October 18, 1882.—Finds caffeine at times relieves her breathing very much; at times, it does not. Not quite as well as she was last time; suffers more from dyspnœa at night and absolute inappetence. Return of asystolie:

℞ Tr. nucis vomicæ, gtt. v
Tr. belladonnæ, gtt. v
Mist. amygd., ʒ ij.

M. S. Every four hours.

October 19, 1882.—Has slight hacking cough; thinks she caught a cold in nursing an ill son at night. Repeat medicine.

October 21, 1882.—Complains still of cough:

℞ Ammon. carb., gr. xxx
Tr. nucis vom., gtt. xxv
Tr. digitalis, gtt. xv
Syrupi acaciæ, ʒ j
Aquæ, ad. ʒ iij.

M. A teaspoonful every two hours in a little water.

October 29, 1882.—Cough nearly gone, breathing improved, but still obliged to be propped with several pillows at night in order to sleep; say that first mixture with caffeine helped her breathing most, legs have been very œdematous last few days, abdomen increased in size, (due to serous effusion).

℞ Bandaged legs,
Pulv. scammon co., gr. vij.

S. Every three hours.

℞ Bitartrate of potash lemonade, ʒ ij–Oj
Acet. pot., gr. x.

Every two hours. (Says that urine is deficient in quantity.)

November 11, 1882.—Complains of cough and dyspnœa; slight frothy sputa; legs more swollen; small quantity of urine; few subcrep. râles in chest, especially in front, face pale and puffy; eats more.

℞ Fl. ext. convallariæ majalis, gtt. 5.

Every three hours, increase to gtt. 10, if suits. Wet pack to make sweat, has considerable diarrhœa following use of scammony powders. Asystolie marked; pulse regular and quite good as regards strength.

November 12, 1882.—Finds convallaria promotes pleasant sleep; whenever she takes it, sleeps quietly; does not cause nausea; helps her breathing; she breaths more easily; her cough about the same with blood streaked sputa, during last 24 hours.

℞. Repeat convallaria, and apply Stokes' lin. over chest.

November 16, 1882.—Leg (left) very much swollen and painful; worse now than ever been since she had phlegmasia in it many years ago; right leg very slightly swollen; heart action stronger and somewhat slower and more regular; still, however, marked asystolie; says that convallaria gives more relief to her breathing than any drug she has tried; continues to make her sleep; took 7 gtt. last night at a time, instead of five, slight dry, hacking cough; appetite poor.

Repeat convallaria; poultice of digitalis leaves to leg. Hot air bath daily (took a hot air bath last two days and thinks the perspiration helped her, although it was not very free).

Nov 23, 1882.—Better than yesterday; breathes better and less cough; face has bloated appearance; moderate effusion into left pleural cavity; left leg

much swollen and painful; appetite very poor; took hot air bath at Windsor baths yesterday; tried her strength very much; limbs (lower) seem more swollen since upper portion of body perspired well; not lower.

November 19.—Ordered the following:

℞ Sp. æth. nitrosi,
Infusi digitalis, āā ʒss.
Liq. ammon. acet., ʒiij.

M. S. 3 ij. every two hours.

This mixture did not increase quantity of urine notably, but rendered her pulse slow (60) without apparently giving it more strength.

Ordered:

℞ Unguent. hydrarg., ʒss.
Unguent. belladonnæ, ʒj.

S. Apply to left leg.

November 21.—Ointment did not help limb. Ordered following:

℞ Caffein. cit., gr. xxx.
Pot. acet., ʒij.
Syrup. aurant., ʒss.
Aq. ad., ʒij.

M. S. A teaspoonful every two hours in water.

November 23.—The last doses of mixture seemed to nauseate her. In fact she had one vomiting attack. Thinks it increased the amount of water she passed, although this was difficult to affirm, as she took yesterday acid drinks with about ʒ iij to Oj of cream of tartar, which moved her bowels freely. She does not have the same stimulating effects, in so far as her heart action is concerned as is given by fluid extract of convallaria. Breathing is certainly not as much relieved. True, convallaria does not benefit her dropsical symptoms notably, but it does not cause nausea or vomiting.

℞ Repet. convallaria gtt. v, every two hours. Hot air bath day after to-morrow.

November 25.—Breathes easily to-day, because, as she says, she has been sitting up in a chair all day; a considerable amount of watery, frothy sputa; took another hot-air bath to-day, with somewhat less fatigue than two days ago; appetite a little better; legs still very painful, although frictions with cocoa butter relieved their tension a little; pulse 72, fairly strong; heart sounds somewhat weak and muffled, and always very irregular and absolutely lacking in synchronism. Convallaria does not make her sleep any longer; was in a sort of half unconsciousness a great deal during the night; has been nauseated and vomited once every evening during last few evenings, after a severe paroxysm of cough. Does not attribute it, however, to convallaria. ℞ Repet. convallaria every three hours five drops, and every six hours 10 m. of tinct. ferri perchlor. with equal amount of spirits chloroform, glycerine and water every six hours. Continue vapor baths every other day.

December 3.—Have given her tinct. sylphium gummiferum, gtt. v., to be taken occasionally when troubled with difficulty of breathing. The sylphium appeared to give her some relief last night when attacked with great oppression and cough.

Hot air baths do not appear to give her sensible relief, and the fatigue of getting to and fro wearies her intensely. Her legs are very painful and swollen. She is seated nearly all the time in a chair. Her urine remains high-colored and small in quantity—not more than 16 ounces in 24 hours—for several days past, and although she has been drinking freely of decoct. triticum repens. Stopped to-day mist. ferri, convallaria and trit. repens and ordered:

℞ Pot. iod., ʒ j.
Caffein., ʒ iss.
Syr. aurant., ʒ iss.
Aquæ ad., ʒ iij.

M. S. 3 j every three hours, in half a wineglass of water.

December 4.—Showed great somnolence and complained of feeling dull and heavy in brain. Stopped mixture. ℞ Infusi digitalis 3 ij every two hours.

December 5.—Had a bad night; could not sleep; to-day pulse irregular, depressible, about 72 per minute; heart action quite strong, less asystolie, more rythmic beats; mind clear; passed more urine, about one quart in last 24 hours; (must remark that she passed this quantity for the most part whilst taking caffeine with potas. iod. This mixture seemed to cause nausea and she began infusion digitalis this morning; when I saw her in the afternoon she had taken five doses. The lower limbs are less swollen, tense and painful. This benefit seems to be more due to caffeine and potas. iod. than to digitalis, since it was already marked before she began the use of the digitalis, which she only did because potas. iod. mixture nauseated her. Repet. infusion digitalis, ʒ ij. every two hours.

December 10.—Feels considerably better; passed nearly three quarts of urine in last 24 hours; legs diminished in size and less painful; abdomen also slightly diminished; has not slept well for some nights and last night took five grains Tully's powder, which gave her quiet rest of several hours; heart sounds stronger and more regular than they have been for a long while. Can now distinguish a murmur at first sound and at apex of heart, showing mitral regurgitation. P. 60. Infusion digitalis to be taken (ʒ ij) every four hours. Complains of pains and aches in different regions of body since swelling subsided. Takes very little food, and what she does swallow seems to distress her. Gave ʒ j essence of pepsine after each meal.

December 17.—Very much better in every respect; legs are of normal size, abdomen much smaller, face less puffy, appetite improved, passes about three pints urine daily; pulse 60, stronger, but irregular; force of cardiac pulsations, as well as rhythm, much improved; asystolie only slightly marked; breathes decidedly better; no cough; has taken digitalis infusion ʒ ij during last two or three days every six hours and resumed small doses of mist. ferri perchlor. Repet. omnia.

PART II.

The lily of the valley, convallaria majalis, has been known many years to scientific observers, especially in its quality of a purgative plant, somewhat similar in its effects on the human economy to aloes, or scammony. As far back even as 1830, an analysis of its constituents was made by Valz, and two glucosides were separated from it and called by him convallamarin and convallarin. Later on, in 1865,* Stanislas Martin discovered the alkaloid majaline. To this alkaloid and to convallamarin the special efficacy of the plant as a cardiac tonic is presumably due. This action, however, was but little dwelt upon by medical writers, and it was only after many attempts, that preparations have been made by pharmacists free of the purgative elements,

*Union Pharmaceutique, quoted by Tanret.

notably contained in the resinous part of the plant. In 1867, W. Marmé* made a thorough study of the physiological action of convallamarin and convallarin on animals. These researches were published under the title of "Ueber Convallamarin. ein neues Herzgift." In dogs and cats poisoned by hypodermic injections of convallamarin (15 to 30 milligrams) the heart suddenly ceased to beat and this stoppage was preceded by clonic convulsions of mild type. He affirms that as a cardiac poison, it approximates in quality and quantity, digitaline and helleborine†. For many years convallaria has been employed in Russia as a popular remedy for dropsy. Few, or no detailed reports, however, as to its uses in this direction had appeared in medical periodicals until the year 1880. In that year there were published in the "Vratsch" some articles relative to the employment of this drug as a tonic of the circulation.‡ Prof. Germain Sée, of Paris, became familiar with these articles and some other illustrative facts with respect to its use. So much impressed was he by the statements and the oral communication of Prof. Botkin, of St. Petersburg, that he determined to make a thorough trial of this drug. He made use of all the different pharmaceutical preparations and finally concluded that the aqueous extract of the flowers and twigs, (to which is added a third by weight of roots and leaves), of which the daily dose should be from 15 to 30 grs., was the most reliable and powerful of all. This extract has a bitter taste, is very soluble in water and alcohol and is of an agreeable, persistent odor. It may be given pleasantly in syrup in conjunction with an aromatic. A chemical analysis of convallaria made by Mr. Hardy, chemist of the Hotel Dieû, Paris, also, confirmed the statements already made known by Marmé, that the glucoside convallarin is extremely powerful in its action as a poison and resembles very much digitaline. A second glucoside, convallarin, contained in convallaria seems to be more or less inert in its properties. By numerous experiments upon cold-blooded animals, Sée discovered that a local application of a few drops of an aqueous extract of convallaria to the heart of a frog, will stop its pulsations immediately. In a less degree this holds true of the local applica- of this extract of convallaria to the hearts of animals higher in the scale. Convallaria was found to have no perceptible effect on the bulk of urine passed in twelve hours. It gave force to cardiac pulsations, rendered them slower, and established again a normal rhythm in cardiac action. The respirations were slower and deeper.

The action on the vagi was to dull their sensibility somewhat. If poisonous doses are given, the pulse becomes irregular and intermittent and finally the heart stops in systole, contrary to the effect of muscarine. Since Sée's experiments, the following conclusions have been reached by Ott in his investigations upon the physiological action of convallaria majalis:*

"1. That convallaria increases the arterial tension greatly at the same time as the heart begins to beat more frequently; that the heart begins to fail before the tension.

2. The decrease of cardiac frequency is not due to cardio-inhibitory excitation, but to an action on the heart itself, probably its muscular structure.

3. The rise of arterial tension is mainly due to stimulation of other vaso-motor apparatus than the main monarchical vaso-motor centre.

4. The drug causes clonic spasms. If we compare the action of this drug with digitalis, it is found that the slowing of each is due to different causes; with digitalis it is due to cardio-inhibitory excitation; with convallaria some other part of the heart is the agent. Digitalis does not primarily accelerate the heart; convallaria does. After section of the spinal cord digitalis is powerless to increase arterial tension, whilst convallaria does. If now we compare the action of this drug with other cardiac agents, as aconite, urechites suberecta or astragalus mollisimus, it is found that it does not belong to this group. As aconite, urechites and astragalus, resemble each other in their action, yet many important differences exist, so does convallaria differ from digitalis in several important particulars. The great rise of arterial tension would indicate its value in dropsies, reasoning upon Ludwig's theory of renal secretion. It is a drug which must not be pushed to any great extent, if I am to judge from a rather extensive experience with cardiac agents, upon the hearts of the lower animals."

In Prof. Sée's clinical cases we have twenty individuals treated with convallaria. Of these, all were affected with a notable degree of cardiac disorder, usually of chronic nature. In seventeen examples there was marked improvement. The most notable effects produced were those on the urine, the pulse, infiltration of tissue and dyspnœa. Within forty-eight hours after the exhibition of the extract of convallaria, the urine was notably increased in quantity and from one pint it frequently reached as much as six or seven pints in 24 hours. The pulse became slower, stronger, less unequal, and lost its irregularities. Little by little dyspnœa disappeared, so that after ten days, or two weeks, the patient was able to go up stairs without great oppression. In a similar manner the œdema and infiltration of the lower limbs gradually disappeared, the effusion into the abdominal cavity was considerably diminished. The breathing, also, became more profound and slower. The effects of convallaria upon the stomach have been rather favorable than the reverse. Far from causing inappetence, nausea, or vomiting, it was always borne with ease, and at times appeared to excite the appetite and facilitate the movements of the bowels. Incidentally, I should state here, that the experience of Sée in this regard, is opposed to that of Dr. A. H. Smith, who, in a case read before the Section on Practice, New York Academy of Medicine, Nov. 21, 1882, alluded to the fact of the stomachal intolerance caused by convallaria, and, judging by his own experience, was

*Nachrichten von der K. Gesellschaft der Wissens. Gœttingen, 1867, p. 160–164. Bull. Gén. de Thérapeutique, 13, Août, 1882.

†Marmé's conclusions are, also, reported in Schmidt's Jahrbücher, 1867, No. 5, p. 166, and in the New York Medical Journal vol. vi, p. 166–168.

‡It is right to add here that a full report in regard to the action and uses of convallaria majalis was first given to American readers by Dr. Ralph d'Ary, of Romeo, Michigan, in the THERAPEUTIC GAZETTE, Oct., 1881, p. 369. Not only did Dr. d'Ary give his own experience, in the treatment of various forms of heart disease by convallaria, but he, also, furnished to the editors of the GAZETTE, translations of articles on this subject from the pens of Drs. Botkin, Troitsky and Bogojavlenski, of St. Petersburg. I regret to add that I was not familiar with Dr. d'Ary's work until it was too late to incorporate even a portion of it in my own article. B. R.

*Archives of Medicine, February, 1883.

disposed to advise its employment by the hypodermic method in order to obviate this drawback. In many instances in which dropsical symptoms were accompanied by the usual attending dyspnœa, it was found that a combination of convallaria, with iodide of potash, acted rapidly and most efficiently.

Latterly, several contributions have appeared in regard to the use of convallaria majalis. Among these we, we should cite one in the Paris Médicale, March 25, 1882, p. 140; another by Dr. E. P. Hurd, of Newburyport, Mass., in the Medical Record of Sept. 9, 1882—and additional notes by the same physician in the Record of Nov. 11, 1882, and Feb. 17, 1883; another by Dr. A. H. Smith, in the Archives of Medicine, December, 1882; and still another very careful study by Henry Ling Taylor, in the Medical Record of January 27th and Feb. 3, 1883. Besides these, I would also refer to the remarkable case of vagus neurosis, with extremely rapid action of the heart, relieved by convallaria majalis, and reported to the Practitioners' Society of New York, at a stated meeting, Jan. 5, 1883, by Dr. Wm. M. Polk. In this case, as in one of Dr. A. H. Smith's cases, the convallaria was employed hypodermically, with excellent and rapid effects.

I should likewise mention the abstract of a paper which originally appeared in Archiv. für Exper. Patholog. und Pharmacolog., Bd. xvi., s. 149, and which is given quite fully under the title of "On Digitalin," in the London Medical Record, Jan 15, 1883, by Schmiedeberg.

This communication is a valuable critical digest of all that is up to the present time known regarding the action of digitalin and that of active principles akin to digitalin.

Amongst these, in class No. IV of Schmiedeberg, under the head "Amorphous Glucosides Very Soluble in Water, and Resembling Saponin," we find (15), Convallamarin, very like digitalin; from convallaria majalis.

Further, there is a short excerpt in the very last number of the New York Medical Record, Feb. 24, 1883, taken from the Wiener Med. Wochenschr., Nov. 11th and 18, 1882, in which Dr. Berthold Stiller reports very indifferent success in the treatment of heart disease with convallaria. From his experiments, "Dr. Stiller concludes that convallaria, so far from being an efficient substitute for digitalis, is not worthy of even ranking as an adjuvant to this remedy in cardiac disease. He admits, however, that the specimens of convallaria used by him may have been of quality inferior to that employed by other observers who have reported such brilliant results." It is probable that Dr. Stiller may have been disappointed in his results on account of the particular kind of cardiac disorders he has been called upon to treat. It is not presumable that convallaria shall be equally valuable in all forms of heart disease. There must be, as for digitalis and belladonna, certain indications which should guide us in its use. Already one acute observer, Dr. E. L. Trideau,* of Saranac Lake, N. Y., after making use of the drug during one year in different cases, has come to the conclusion that convallaria is specially indicated and useful when the right heart needs stimulation as it frequently does, in cases of old mitral disease, and in those where chronic phthisis is present. In many examples of aortic disease, Dr. Trideau has found no benefit from the use of convallaria in relieving the symptoms which depended upon this affection. If I might be permitted to add a remark made to me in ordinary conversation, I would add that Dr. Francis Delafield is disposed to believe that convallaria will hereafter prove serviceable in cases of pneumonia, where there is appreciable failure in the contractile power of the right heart and in which digitalis is insufficient to give relief.

Now that I have given references to the observations and clinical experience of others, I shall refer to my own. I have given convallaria to four cases of asthma, in three of which, at least, there was evident chronic bronchitis and emphysema; in one case of enlargement of the heart, without valvular lesion, double pleurisy, with effusion and chronic Bright's disease; in one of sub-acute pericarditis, atheromatous degeneration of the coronary arteries and cystic degeneration of the kidneys; in one of chronic pericarditis, nutmeg liver and chronic diffuse nephritis; in one of combined mitral stenosis and aortic regurgitant disease; in four of simple dilatation of the heart, in one of which there was an intercurrent attack of sub-acute laryngitis; in two, marked cardiac irritability; in one of tendency to syncopal attacks; in one of cardiac hypertrophy and aortic stenosis; making in all fourteen cases. In eleven of them I have kept careful notes of the action of convallaria. In the other three cases, as well as in several which I have not mentioned, I have only the remembrance to guide me in what I am about to state. Before doing this, however, I shall read you the histories of eight of my cases.*

Case 1.—†*Asthma Dependent upon Vesicular Emphysema, Relieved in a Remarkable Degree by the Internal Use of the Fluid Extract of the Root of Convallaria Majalis.*—The history was as follows: J. H., æt. 63, German, came to the out-door department of the New York Hospital, October 4, 1862. He complained of constant dyspnœa and sleepless nights. He was poorly nourished, and his nose and lips were cyanosed. His health was tolerably good until 11 years ago, when he began to suffer from shortness of breath on exertion. At present, even the slight effort of putting on his shirt exhausts him. His mother and two of his brothers were affected in the same manner. His voice is short and jerky, and he occasionally spits a small quantity of thick, gluey sputum, preceded by a cough of moderate intensity.

The expectoration of this substance relieves his dyspnœa somewhat for a time. His appetite is poor, his bowels obstinately constipated. He is compelled at night to assume a semi-recumbent posture in order to obtain any sleep at all.

Physical examination of the lungs reveals great emaciation of the chest walls; shoulders high; back much bent over; thorax dilated at the base; sterno-mastoid, scaleni and trapezius muscles are prominent during inspiration; chest moves as a whole in a vertical direction during the respiratory acts; third

* N. Y. Med. Rec., March 3, 1883, p. 251.

* Three cases were treated after this paper was returned by the type-writer, and I could not incorporate them readily in the body of the article. One was a case of aortic stenosis, with hypertrophy, not benefited by convallaria; two were cases of cardiac dilatation and considerable irritability of heart action; both were relieved by the use of convallaria.

†Case presented at a stated meeting of the Practitioners' Society, January 5, 1883; reported in New York Medical Record, February 3, 1883.

and lower intercostal spaces are sucked in visibly with each effort to breathe. Alæ of nose are markedly distended; expiration is stertorous. Superficial veins of arms and forearms are much dilated. There is considerable pulsation of the brachial arteries at the elbows. On percussion hyper-resonance covering a wide area is discovered, which is especially pronounced on the left side of the thorax. Auscultation anteriorly gives rough inspiration with numerous sonorous rhonchi on both sides; expiratory sounds are feeble. Posteriorly, inspiratory vesicular murmur is very feeble; expiratory sounds are loud, and accompanied with disseminated dry râles.

Physical examination of the heart shows apex beat in fifth intercostal space to left nipple; epigastric pulsation diffused; cardiac beats are but feebly felt; atheromatous changes in arteries are at an advanced stage. There is a faint blowing murmur synchronous with the systole, and heard with greatest intensity outside and somewhat below the left nipple.

Patient's symptoms always become more accentuated toward evening. Atmospheric changes have no obvious influence upon their character or degree. Country air in past time has apparently given him relief from his continued oppression. Several years ago, while in Rockland county, he felt much better than usual. At present he is prevented from leaving the city on account of his narrow means. Latterly he has taken medicine sparingly; in former years he took large quantities of different kinds of medicine. Spirit of camphor, in 20 gtt. doses, formerly gave him great temporary relief. He is now very much annoyed by a condition of cutaneous irritation, which has occasioned prurigo to an excessive degree.

October 4, 1882.—At 3:50 P. M. fluid extract convallaria, Mxv, were given by the mouth. Twenty minutes later patient states that he breathes with much greater ease, notwithstanding a rapid walk of several minutes' duration through the waiting-room of the hospital.

℞ Fl. ext. convallariæ, Mjv
Syrupi tolutani, Mviij
Aquæ, q. s., ad., ʒ j.

M. S. To be taken by the mouth every three hours.

October —

℞ Fl. ext. convallariæ, gtt. v.

S. Take every three hours.

October 16.—Medicine seems to benefit him, inasmuch as he continues to breathe with greater comfort to himself.

October 20.—*Statu quo*—continue treatment.

October 27.—Repeat treatment.

November 8.—Repeat treatment.

Patient states when dyspnœa becomes more intense, as it sometimes does, in a paroxysmal manner, he increases the usual dose by several drops.

November 20.—Repeat recipe.

December 1.—Increase dose of convallaria to gtt. x every three hours.

When patient is at home and in repose, his breathing is much freer than formerly. While taking moderate exercise it is still very short and shallow, but if he rests for a short time afterward his respiration again becomes relatively quiet, and is decidedly improved over what it was under like circumstances, before he began to take convallaria.

December 22.—Patient rests quietly at night. He can sleep now lying down, but is as yet unable to work on account of debility. His appetite is poor.

During the past 17 years he has taken a great many drugs, prescribed by various physicians, but affirms positively that he never got much relief from any medicine until the present time. Since convallaria was first taken his breathing has continued steadily to improve. The quantity of urine passed has always been abundant, and has not appreciably increased under the new treatment. Repeat medicine.

December 29.—Feels about the same. Amount of urine passed in 24 hours measures one quart. Estimation was made on two occasions. Recipe as above.

Formerly, when able to work, the man had been employed in a sugar factory, and afterwards in a tobacco factory.

Case 2.—**Chronic Bright's Disease—Dilatation of the Heart—Pericarditis.*—The following history was written for me by Dr. Charles Beach, junior assistant on the medical division of St. Luke's Hospital:

H. G. had had numerous rheumatic attacks, involving one or both ankles. The last attack occurred eight months ago, when the knees were involved. It lasted six weeks. She had never had any cardiac symptoms. In July, 1882, she was exposed to cold and damp air, since which time she has been failing in strength. Micturition had been frequent, spots floated before her eyes, and she had suffered from nausea. Two months ago she began to have dyspnœa, somewhat paroxysmal in character, and œdema of the feet, legs, hands and face appeared. At various times she had had moderate pain in the left side of the chest. On admission the patient had marked œdema of the face and extremities, was suffering from extreme dyspnœa, had a very weak pulse, no appetite, and her temperature was elevated. Digitalin and whisky were administered hypodermically. The urine had a specific gravity of 1010 .acid reaction, contained fifteen per-cent. of albumen, but the microscopical examination was negative. Both pleural cavities were about half filled with fluid. Examination of the heart was negative. Thirteen ounces of fluid were withdrawn from the right side of the chest. Immediate and marked relief followed.

Physical Examination: Respiration 32; pulse 108 and tense; the apex beat could not be felt. Pericardial friction-sounds were heard midway between the apex and the left border of the sternum. The first sound of the heart was prolonged. There was evidence of pericardial effusion, and also of fluid in the left pleural cavity. The spleen was slightly enlarged. The dyspnœa was believed to be chiefly uræmic. A milk diet was ordered. Half an ounce of whisky was administered every six hours. One minim of a one-per-cent. solution of nitro-glycerine was ordered every four hours.

October 27.—The patient had a chill this morning lasting fifteen minutes; also vomiting. During the last twenty-four hours she has passed sixteen ounces of urine. The nitro-glycerin was reduced to one drop three times a day. The vomiting persists. The bowels were moved by enemata. Cups were applied to the loins.

November 1.—Physical examination revealed dullness up to the angle of the scapula. Nitro-glycerin

*Specimens were presented at a stated meeting of the New York Pathological Society, Dec. 13, 1882. (See New York Medical Record, Jan. 13, 1883).

was discontinued. Over the apex of the heart there could be heard, on inspiration and expiration, a rubbing sound, not affected by the heart motion, but still believed to be probably pericardial. The urine had a specific gravity of 1008 neutral reaction, and contained thirty per cent. of albumen. The patient had passed twenty-four ounces during the past twenty-four hours.

On November 2 the cardiac sounds were distant and indistinct; crumpling sounds were still heard. Cardiac dilatation, localized pericarditis. Whisky was continued three times a day. The fluid extract of convallaria, ten minims, were administered every six hours. From November 4th to November 9th the patient received whisky and the fluid extract of convallaria and the quantity of urine passed varied from twelve to twenty-two ounces in the twenty-four hours. On that date pericardial friction-sounds were noticed preceding the second sound of the heart. Pulse 96.

On November 11th the right side of the chest was aspirated and thirty-five ounces of fluid were withdrawn.

On November 12 the patient passed ten ounces of urine which had a specific gravity of 1.014, was alkaline, and contained sixty per cent. of albumen. On November 15 the œdema of the feet and legs had increased. On November 16 there was œdema of the vulva. Patient passed fourteen ounces of urine. A creaking sound was heard over the pericardium. November 18 the pericardial friction-sound had almost entirely disappeared. The patient's pulse was 72 and regular; she passed twelve ounces of urine. The convallaria and the iodide of ammonium, which had been administered since November 8, in doses of two grains, were then discontinued. On November 19 the hot air bath was administered. On November 20 the patient passed only eight ounces of urine, and had pain in the back and lumbar region. From this date to November 22 there was no marked change in the condition of the patient and on the 24th she died.

At the autopsy the abdominal walls were found infiltrated with serum, and the abdominal cavity contained about eight ounces of fluid. There were about ninety-eight ounces of serous fluid in the pleural cavities. There was about one ounce of serum in the pericardium, over the apex of the heart anteriorly. Just to the left of the septum was a small patch, about the size of a split pea, of thickened plastic exudation. On the posterior surface of the aorta, just above the reflexion of the pericardium, were seen patches presenting the same appearance. The right ventricle was distended and contained dark and white clots. The left ventricle was hypertrophied. The valves were apparently normal. The heart weighed fifteen and a half ounces. The lungs were more or less compressed and the pleura was thickened. The spleen was enlarged and the capsule thickened; weight nine ounces. The capsule of the liver was thickened, especially about the inferior ligament, and the surface showed white streaks with some increase of connective tissue. The kidneys were the seat of chronic intestinal nephritis. Both were reduced in size, the left weighing only an ounce and a half. There were cysts in both ovaries.

Attention in this case is directed to the use of convallaria and nitro-glycerin. Both these remedies were employed and there was no noticeable increase in the quantity of urine passed. Evidently under the influence of convallaria the cardiac action was increased in force and the heart was made to do its utmost, and apparently the woman would have been benefitted except for the condition of the kidneys. While the patient was taking the iodide of ammonium a pericardial friction-sound disappeared, and at the autopsy it was believed that the evidence of disappearing pericarditis was found.

I believe in those cases where we find a low specific gravity of the urine, and its quantity cannot be increased by the best known cardiac stimulants, that the atrophic kidney usually exists, and we should all be prepared to assume that with a small quantity of urine with nothing specially abnormal about the specific gravity, and failure on the part of the kidneys to respond to cardiac stimulants, as in the case recited, there is at least a reasonable probability of finding that form of kidney degeneration.

(*To be concluded in our next.*)

On Convallaria Majalis.

By E. P. Hurd, M. D., Newburyport, Mass.

TO have been in any humble way instrumental in introducing a new cardiac remedy to the profession would be a life-long gratification to any one. Dr. Ralph D'Ary, of Michigan, may felicitate himself on having done a lasting good to his confréres in this country. If in any way by my article in the Medical Record for September 9th, I have helped awaken the attention of the physicians of the United States to the importance of convallaria as a safe and efficient heart tonic, which must henceforth ever be the rival of digitalis, while in many respects superior, I certainly deserve very little credit for the act, and even Prof. Sée, with all his laboratory experimentation and clinical tests of the new medicament, has done little but confirm, enforce and supplement the work of the Russian physicians.

Messrs. Parke, Davis & Co., of Detroit, have done everything in their power to place in the hands of physicians all over the land a supply of a thoroughly reliable spirituous extract of the medicinal parts of this member of the liliaceæ family. At a time when there was little or none to be obtained elsewhere in this country, they were ready to supply the profession, and at reasonable prices, taking no advantage of the scarcity of the drug in the market. And when, finally, their stock was exhausted, they canvassed the markets of Europe for a supply which should last till the coming flowering season, now just in its meridian.

OBSERVATION I.—MITRAL INSUFFICIENCY WITH CARDIAC DILATATION AND HYPERTROPHY, GENERAL ANASARCA, ŒDEMA OF THE SCROTUM, ASCITES, AMELIORATION AND CURE UNDER THE INFLUENCE OF CONVALLARIA.

Patient, S. L., of Newbury, Mass.; American; married; farmer by occupation; aged sixty.

Hereditary Antecedents.—Mother died suddenly at the age of seventy of some heart disease. Maternal grandmother had heart disease and dropsy. Father, a rugged man, still living, aged eighty-five.

Personal Antecedents.—Nothing definite can be learned as to etiology. Is a farmer of steady habits; has never been syphilitic; never had rheumatism.

His has been a life of hard work and overwork, with exposure to all kinds of weather.

Pathological History.—Mr. L. has enjoyed good health the most of his life. Four years ago he for the first time complained, on severe exertion, of palpitation, precordial pain and oppression, and shortness of breath. This obliged him to be moderate in work. These attacks were treated as functional disturbances from fatigue and strain of the heart.

Last July and August he was confined to his bed from diffuse suppurative cellulitis of the right arm, the result of removal of a tumor near the elbow. The phlegmonous inflammation got well after numerous deep incisions, giving free exit to pus. Mr. L. continued in feeble health and about the middle of November became very dropsical. He improved somewhat under digitalis and iron, but in February, when seen by Dr. Howe, he was in a deplorable condition from asystolism and dropsy; his appetite had failed him, and he was unable to lie down from the enormous distension of the abdomen and the pressure on the thoracic organs. Dr. Howe hearing, somewhat later in the season, that I had obtained a large quantity of the fluid extract convallaria root from Parke, Davis & Co., of Detroit (and here I desire to express my obligations to Mr. George S. Davis, of the above firm for his kindness), recommended Mr. L. to apply to me. I should add that digitalis had lately failed to do any good.

I saw Mr. L. early in March. His appearance was that of a man naturally vigorous, but anæmic and pale; the face was somewhat puffed, the lips of a livid color. The breathing was short, and he was bolstered up in bed. There was marked anasarca of the lower extremities, thighs, hips, back, cellular tissue of the walls of the abdomen; there was œdema of the scrotum, and great ventral distension from ascites. Careful inspection revealed no bulging in the region of the heart; the apex was seen to beat in the sixth interspace, just outside of the line of the nipple. Percussion indicated an extension of the area of cardiac dullness. The heart's action was weak and rapid and irregular (asystolism), and a soft systolic murmur propagated towards the axilla, was audible at the apex.

The digestive and intestinal functions did not appear to be disturbed, though appetite was poor. Urinary secretion of a deep wine color, depositing a thick brick dust sediment shortly after being voided; amount in the the 24 hours, under eight ounces. I at once prescribed the lily of the valley, in doses of half a teaspoonful every four hours, of the liquid extract of the root.

It would have been interesting could I have followed this case day by day and noted the effects of the administration of a remedy which certainly has been attended with remarkable results. This patient lives some distance from my place of residence, and I have seen him but seldom; I have, however, had almost daily reports from his son as to the progress that was being made. Shortly after commencing the convallaria, there was a notable augmentation of urine; daily amount, upwards of two quarts. This diuretic action was kept up all through the administration of the medicine. Diuresis was undoubtedly helped by the free use of oranges, of which he was in the habit of consuming a dozen a day, swallowing the juice and rejecting the pulp. No purges were ever prescribed. Soon the swelling began to disappear, and almost daily a diminution was noted by members of the family. After a fortnight of treatment he was able to lie down. I saw Mr. L. again the last of March. The ascites had markedly abated, and the œdema of the scrotum was gone. There was still some anasarca of the lower extremities. The heart's action, though firmer, was still weak and irregular. I failed on this visit to hear the systolic murmur, audible at my previous visit. In my experience, heart murmurs in organic disease are not always persistent, and unless there is a certain energy of the heart's action, you often do not get them.

I increased the dose of convallaria to one teaspoonful every four hours.

April 12.—I again saw Mr. L. who testified to the truth of the encouraging reports which had been continually brought me by his son. He was now absolutely free from anasarca. There was no pitting anywhere, and the abdomen was free from all ascitic effusion. Heart's action was tolerably firm and strong and steady. Breathing was good. His entire appearance was that of a convalescent man. Was able to sit up a considerable portion of the day, and was enjoying a fair appetite and digestion.

To-day (May 23) I have again visited the patient. The amelioration has continued. He is absolutely free from dropsy and all active or passive manifestations of cardiac trouble. He expects in a few weeks' time to be able to resume work on his farm. Mr. L. has taken altogether two pounds of the fluid extract of convallaria root. The medicine is now discontinued, as there no longer seems to be need of it.

OBSERVATION II.—GENERAL DROPSY FROM MITRAL DISEASE—MARKED AMELIORATION FROM DRACHM DOSES EVERY FOUR HOURS OF THE FLUID EXTRACT CONVALLARIA.

Patient, M. B. F., widow, æt. 60; housekeeper.

Hereditary Antecedents.—Nothing can be definitely learned that sheds light on the case.

Personal Antecedents.—Five years ago had a mild attack of articular rheumatism attended with some pain in the region of the heart and shortness of breath. Ever since that time she has had more or less trouble from palpitation, dyspnœa on exertion, precordial distress, and vertiginous attacks.

Present Condition.—October 26, 1882.—Mrs. F. is a large, stout, fleshy woman; weight 200 pounds; face bloated and turgid; abdomen enormous, fifty-four inches in circumference around the umbilicus; thighs, legs and feet œdematous and pitting; the legs measure 20 inches around the calves and have a dusky brown appearance, with scaly thickened epidermis, reminding you of elephantiasis. Mrs. F. is bolstered in a chair; is unable to lie down from dyspnœa. Physical examination reveals dilatation and hypertrophy of the heart, whose action is weak, rapid and irregular, with faint first sound and no perceptible impulse; apex beat hardly to be felt in sixth interspace on a line with nipple. Over this place a soft systolic murmur is audible. Appetite and digestion impaired; bowels free. The urinary secretion for several days has been almost nil.

℞ Fl. ext. convallaria flowers, ʒss.

Sig.—Take 10 drops every four hours.

October 29.—The heart's action to-day is somewhat firmer—100. Some slight increase in the urine, which is still scanty and high-colored. Convallaria increased to 15 drops every four hours.

October 31.—There has been a marked augmentation of diuresis. Yesterday and to-day fifty ounces of urine of a relatively low specific gravity have been passed. There is a notable increase in the force of the pulse, which is now 85 and tolerably steady. Abdomen to-day measures only fifty inches. This diminution is partly due to the effects of diarrhœa brought on by too free indulgence of the appetite. There is decided decrease in the œdema of the inferior extremities. Convallaria to be continued in twenty-drop doses; this for several weeks to be the maximum. A strong continuous diuretic action is desired, and to attain this, the remedy must be pushed.

The preparation of convallaria used is the fluid extract of the flowers, prepared by Parke, Davis & Co., Detroit.

November 21.—Mrs. F. has been taking the convallaria nearly four weeks, and the results have been most gratifying. The anasarca and ascites have disappeared; the patient can now lie down; the heart is now working with a good deal of force and firmness, but with some irregularity. The abdomen now measures forty-four inches. and this, considering the natural embonpoint of the patient, is not excessive. The urine continues to be voided in quantities averaging from forty to sixty ounces a day. Mrs. F. has a fair appetite and digestion, but is too much of a gourmand, bringing much dyspeptic trouble to herself in consequence of an ungoverned appetite.

The fluid extract lily of the valley was discontinued on account of the market supply being exhausted.

March 3, 1883.—Mrs. F. seems to be one of those vicious subjects who when once cured will not stay cured. After the agreeable results recorded in my notes of November last, repeated relapses occurred. The first complaint of dropsical swellings was made to me in January, when I found the same œdematous condition before described, with signs of ascites. The asystolism, venous stasis, etc., were marked. There was no convallaria to be obtained. Infus. digitalis, with other diuretics and hydragogue cathartics (elaterium 1-16 gr. every two hours till free catharsis; pulv. jalap co., 3 j, night and morning), were prescribed, but with only temporary benefit. Great disturbance of the digestive organs was brought on by these medicines. The latter part of February I received a large supply of the fluid extract of convallaria root from Parke, Davis & Co., Detroit, and I immediately began its administration, prescribing for Mrs. F. half-drachm doses every four hours; a rigid dietary regime to be enforced, if possible.

The convallaria has now been taken several days, with the same good result on the heart and kidneys before experienced. Yet the diuretic effect seems to be disproportioned to the cardiac-tonic action, which is certainly stronger, yet by no means regular. Yesterday Mrs. F. voided fifty fluidounces of urine of a specific gravity of 1015.

March 25th.—For three weeks Mrs. F. has been taking one drachm every four hours, of fluid extract convallaria root. Average quantity of urine *per diem*, forty-eight fluidounces. The anasarca and ascites have again disappeared; the heart's action is moderately strong, firm and steady, 84 per minute; she can now go about her house with some comfort and engage in light work. The medicine is continued in drachm doses three times a day.

May 28.—With the exception of occasional exacerbations of her heart trouble, in which a temporary asystolism with some return of anasarca was noted, necessitating an increase in the quantity of the medicine, the good condition above recorded has continued to the present time.

I take it that this patient will for some time derive great benefit from this remedy, but compensation is evidently failing; the heart muscle is slowly undergoing granulo-fatty degeneration.

III. AORTIC INSUFFICIENCY WITH HYDROTHORAX AND ORTHOPNŒA—MARKED RELIEF FROM CONVALLARIA.

Patient E. C., a married lady, æt. 30, American.

Hereditary Antecedents.—Mrs. C.'s grandfather died of some heart disease. Her father has for many years been a sufferer from Corrigan's disease, and has been unable to do any severe labor.

Etiological Antecedents.—Five years ago patient had a severe attack of acute articular rheumatism, which lasted nine weeks, the joints principally affected being the knees and ankles. During this time she had a severe attack of endo-pericarditis, and was in imminent peril for several weeks; the precordial distress and dyspnœa could only be relieved by hourly grain-doses of solid opium. This complication left her with a damaged heart, the principal lesion, as determined by the physical signs, being aortic incompetency. Dilatation and hypertrophy rapidly followed; the latter was so far compensatory that in 1881 Mrs. C. went safely through the perils of pregnancy (so trying to cardiopathic patients) and gave birth to a living child.

Progress of the Case.—In June, 1882, Mrs. C. had another sub-acute attack of rheumatism, attended with a renewal of her former cardiac troubles. When I commenced attending her, the latter part of June, the asystolism was pronounced. The heart's action was weak and rapid, but regular, (regularity of the pulse is a common feature of aortic regurgitant disease) venous stasis was everywhere marked, the extremities were anasarcous, and there was hydrothorax and œdema of the lungs. A loud diastolic murmur was audible at the base of the heart, propagated upward; it was also heard distinctly at the apex, where a very soft systolic bruit was sometimes detected. Apex to the left of the mammary line, three fingers' breadth below the nipple. Heart dullness heard as high up as second rib, and nearly as far as the axillary region to the left. The patient could not lie down and was subject to almost constant pain referred to the region of the heart.

For a long time the only treatment that seemed to do any good was the opiate treatment. So constant and so severe was the pain that it appeared to be the master symptom. At first solid opium was administered; then hypodermic injections of morphia night and morning. The over-distension of the heart cavities evidently had resulted in erethism of the cardiac sensory nerves. Infus. digitalis, in doses of a tablespoonful every four hours, appeared for a long time both to strengthen the struggling heart and to keep up a diuretic action, but this drug eventually lost its effect and ceased to be tolerated.

The latter part of the summer I obtained a quantity of Parke, Davis & Co.'s fluid extract of the flowers of convallaria majalis and began its administration to this patient, in the dose of five to ten drops

every four hours. Its effects from the first were very gratifying, the heart's action seeming more forcible, and the dyspnœa abating, with diminution of the quantity of liquid in the thorax, coincident with copious diuresis. When this patient commenced taking the convallaria she was passing only half a pint of urine in the twenty-four hours; in three days' time she was passing two quarts a day, and soon an average daily diuresis of forty-eight ounces was established. The anasarca of the lower extremities disappeared before the end of the first week's experience with the new remedy. For a time I was able to suspend the nightly morphine injection, such was the relief given to the painful symptoms. There was subsequently a return of the periodical distress, for which hypodermic morphia was again required, though in only one-half the former dose.

This is the patient whose case I reported to the Medical Record September 9th, 1882. I there took a discouraging view of the case, believing that granulo-fatty degeneration had so far progressed that only temporary alleviation could be obtained from any remedy. I am obliged to acknowledge my mistake. The convallaria was continued in gradually increasing doses up to half a teaspoonful, or about fifty drops every four hours of the fluid extract of the flowers. It did not lose its effect as I supposed it would. Under its influence the nutrition and tone of the myocardium have been promoted, abundant diuresis has been kept up, and all dropsical accumulations have disappeared.

Prof. Sée has seen little benefit from the convallaria in the dyspnœa from aortic insufficiency. In this case the result has been as marked and as gratifying as anything could be.

The above notes were made early in November. It is now several months since Mrs. C. has been obliged to take any convallaria. She has had fair general health all winter, and has done her own housework, but alas! I am sorry to be obliged to confess it—sorry that I have been in any way concerned in this deplorable result—she is a victim of morphomania!!

In the next case, one typical of Corrigan's disease, I have not been able to record any good results from the convallaria; here Prof. Sée's experience meets corroboration. The same may be said of preparations of digitalis, and it may be laid down as a rule that in aortic insufficiency you do not get the benefit from heart tonics that is obtained in mitral lesions. It is not the fault of the heart if there is anæmia of the arterial system; it is the fault of the valves, and they cannot be reached by any remedy. We shall confer more good by combatting the anæmia by treatment directed to improving the local circulation in certain organs than by the exhibition of digitalis and convallaria.*

IV. OBSERVATION.

This Observation concerns a patient, David G. by name, aged forty-eight, afflicted with aortic regurgitant disease. Patient is a tall man, with pale figure, regular, bounding "water hammer" pulse, loud diastolic murmur at base; he almost constantly complains of shortness of breath, is nervous and irritable, and cannot sleep nights. Besides the dyspnœa on exertion, he has, every night, paroxysms resembling spasmodic asthma, which oblige him to leave his bed and sit up. There is no œdema of the extremities, hydrothorax or ascites.* The heart is largely hypertrophied and labors heroically against its obstacles, but cannot fill the arteries when active exertion calls for more blood. Consequently he has been obliged to give up his occupation as day laborer in a cotton factory. He was brought home insensible the other night from a fire, where he attempted to perform his duty as assistant engineer.

In this man I believe that fatty degeneration of the myocardium is slowly progressing, producing a break in compensation; the heart cannot be made to do more work; certainly digitalis and convallaria (both medicaments in various forms) have served only to aggravate his condition. Opium and other calmatives and sedatives, with whisky at bed time (which congests the anæmic cerebrum, especially when given along with opium) and revulsives to the thorax, have seemed to do the most good.

Dujardin Beaumetz, in summing up results which he has obtained from the "maguet" in his hospital service, complains of having found the remedy unreliable in some cases, while succeeding in others. But the same may be said of every medicine in the materia medica, and it is just as true of digitalis as of every other heart tonic. It cannot be claimed that therapeutics is yet an exact science, and there will be multitudes of instances where the indications clearly will be to strengthen a weak heart, and where everything will fail.

The above are all the striking instances that have come under my observation. It will frequently happen that the general practitioner will not have in his clientele more than three or four bad cases of cardiac dropsy in a year. Such has been my experience the past year.

In several cases of functional arythmia and palpitation, I have witnessed marked benefit from the convallaria in 10-drop doses every three or four hours. One inveterate case of palpitation from excessive use of tobacco, was permanently cured by the convallaria, conjoined with abstinence from the noxious weed. One case of pneumonia in an adult man was materially helped, just at the critical time of the disease, when the heart's action was 130 a minute, pulse small and thready, and respirations were 60, by the free use of convallaria, 10 drops every two hours. In 24 hours the pulse was down to 110, and breathing to 45, and in 48 hours to 100, breathing 35, and so on, improvement in the general symptoms and a clearing up of the lung generally, following. One advanced case of Bright's disease was for a time benefited, there being a firmer heart and a more copious diuresis, with lessening of anasarca. This patient lives in a distant town, and I have not been able to follow up the case.

This report has been delayed somewhat longer than I intended, on account of my purpose to incorporate with it the report of Dr. Elliot, of the City Hospital. Dr. Elliot tried the fluid extract of the root on four hospital patients, and on one patient in private practice.

I understand that these reports were completed and mailed to my address last week, but I have not

*Vide the excellent remarks of Dujardin Beaumetz àpropos of the treatment of aortic lesions in his Leçons de Clinique Therapeutique, t I., p. 150.

*Since this report was written, this patient has died. Toward the end, complete asystolism took place, attended with absence of the loud diastolic basal bruit so long heard. There was great anasarca of the lower extremities and ascites. I take it that the mitral was forced, as frequently happens in advanced stages of Corrigan's disease, with extreme dilatation, and fatty myocardium.

received them. I may at some future day succeed in getting from the hospital interne a duplicate of his communication.

Dr. Garland, of Boston, has tried the convallaria in several cases in his private practice, and with good results. He will publish his observations independently at some future time.

P. S.—Since the foregoing report was in type, I have received from Dr. Elliot, interne of the Boston City Hospital, under Dr. R. T. Edes, a copy of his report, which is here subjoined. According to Dr. Elliot's acknowledgment in a private letter to me bearing date June 8th (and Dr. Edes' statement to me in conversation on the 7th confirms this), the first two cases—marked Observations 5 and 6—are of very little value as tests of the cardio-tonic virtues of convallaria, as they were both nearly moribund when the drug was given.

The obvious criticism to make *àpropos* of the administration of the convallaria in these cases, is that the dose given was altogether too small. I should not expect to see any effect from eight, ten or even fifteen drops t. i. d. of the fluid extract of the root in such desperate cases. Nothing short of drachm doses would even temporarily arouse the sinking heart. The fluid extract of the root is certainly not more than one-third the strength of the corresponding preparation of the flowers, but in the proper dose it seems to be equally efficacious.

The third case—marked Observation 7—illustrates the benefit which may be derived from convallaria in cases which are not too far advanced to be influenced by any remedy. This was a case of left-sided dilatation and hypertrophy, with both mitral and aortic disease.

OBSERVATION V.

Chas. Klinghammer, æt. 29. Acute Bright's disease, in May, '82. Readmitted Sept. 23d, with great general anasarca, ascites, œdema of lungs, orthopnœa. Area of cardiac dulness much enlarged. Apex-beat nearly in anterior axillary line. Amount of urine much diminished. Albumen 1 per cent. Sediment, free blood, numerous hyaline, granular, brown granular and blood casts. Few epithelial and fibrinous casts. Numerous fatty casts and fatty cells. Under frequent hot air baths and diuretics (caffeine, digitalis, potass. acetat.) his condition improved for a time and amount of urine increased. Always great œdema. Held his own for several months and then began to fail. Amount of urine again diminished; œdema increased; always orthopnœa; pulse always weak and rapid (100-120). Finally, when he was evidently on his last legs, other medicines (digitalis and scilla) were omitted and convallaria ordered: M viii, t. i. d.—March 25. Increased on the 28th to M xii, t. i. d. Went steadily down hill. Paracentesis on the 29th. Amount of urine still further diminished. No change noted in rate or character of pulse.

April 6.—Convallaria omitted. Died April 7th.

Autopsy.—Hypertrophy and dilatation of both ventricles; insufficiency of mitral; relative insufficiency of tricuspid; anasarca; hydrothorax; œdema of lungs; diffuse nephritis.

OBSERVATION VI.

James Doyle, æt. 46. March 19, '83. Palpitation for three months. For two or three weeks, cough; thick, white expectoration; dyspnœa; loss of appetite; micturition frequent, nocturnal (2). Œdema of legs, genitals, face and hands. Temperature 97; pulse 100. Short, strong systolic murmur at apex; accentuation of second pulmonic sound. Marked stasis of circulation in fingers. Dulness and fine râles at base of both backs. Urine contained a trace of albumen and an occasional small granular cast; sp. gr. 1023. He steadily failed. Œdema increased; orthopnœa; much abdominal pain; occasional vomiting. Treatment: Digitalis, whisky and diuretics. Pulse became exceedingly irregular and intermittent.

April 3.—Cheyne-Stokes respiration is noted, which continued till death.

April 30.—When almost moribund, other medicines were omitted and convallaria ordered: M x, t. i. d.

May 4.—Convallaria omitted.

May 5.—Died. No autopsy.

No change in symptoms noted while taking convallaria.

OBSERVATION VII.

John Rickard, æt. 50. May 4, '83. Dyspnœa and palpitation on exertion for three months. Cough and white expectoration for a week. Loss of appetite; micturition frequent; nocturnal (once or twice) for a year; slight œdema of legs; area of cardiac dulness considerably enlarged—outside the nipple; long, loud systolic murmur all over left ventricle. At third space on left, systolic sound is heard less loud and a diastolic murmur is heard. At second space to left the pulmonic second sound is heard distinctly.

May 5.—℞ Convallaria M x t. i. d.

May 7.—Systolic murmur at apex, and also one at the base on both sides of the sternum. Between the base and the apex is a point where the systolic murmurs are much less distinct. Diastolic murmur also heard at the base, but the pulmonic second sound not heard with the distinctness noted on entrance. The patient was not kept in bed and had no treatment except the convallaria. The œdema soon disappeared, and the dyspnœa and palpitation, which were never very great, became less troublesome.

May 23.—Discharged relieved.

Inflammation.

By Linnæus B. Anderson, M. D., Norfolk, Va.

A VERY large majority of the diseases to which our flesh is heir, arise from inflammation or are themselves inflammation. The morbid changes which occur in any organ or tissue, by which the inflammatory process is developed, and the attendant and consequential local and constitutional changes are effected, constitute by far the most interesting and important phenomena, which can claim the attention of the physiologist, pathologist and practical physician. A clear comprehension of the laws by which these changes are effected, their powers and limitations, will enable one to determine with great accuracy the morbid condition, the character of the agents which produced it, and hence the nature and *modus operandi* of remedial agents. Herein lies the basis of all sound, scientific and physiological medicine.

To understand the causes of inflammation, the accompanying changes, the local and constitutional effects, and its character and terminations, it will be necessary to enquire into the vital dynamics of the human organism, the origin and distribution of nerve power, the forces which circulate the blood, the functions of nutrition, secretion, calorification and

the sympathetic relations of the various organs and tissues.

To discuss these questions in all their relations would require a ponderous volume, but the leading facts can be so condensed as to occupy a comparatively brief space, and at the same time be so lucid as to subserve all practical purposes. In order to do this, however, it will be needful to formulate our physiological and pathological deductions from the exhaustive investigations of Hunter, Bichat, Magendie, Reid, Lawrence, Wilson Philip, Hunter, Gendrin, Carswell, Le Gallois, Brodie, Hall, Kaltenbrunner and others.

1. The circulation of the blood in the arterial system is effected by the propulsive power of the heart, and the elasticity and contractility of the arteries. The middle coats of the arteries are composed of contractile tissue which behaves in all respects like muscular fibre. This anatomical construction extends to the arterial capillaries as well.

2. The circulation in the veins is effected by capillary attraction, the expansion and contraction of the lungs, and the alternate vacuity and contraction of the right auricle of the heart.

3. In its principle constituents, the blood is composed of serum, albumen, red corpuscles and fibrin. Fibrin is albumen in its highest state of vitality short of organization.

4. So soon as healthy blood comes to a stasis it begins to coagulate, which is the first stage of organization. The coagulum is composed principally of fibrin, in which are enclosed the red globules.

5. The cytoblasts, or nourishment cells of the blood, contain a nucleus, which is the vital germ, and when brought into contact with living tissues for which they have an affinity, these nuclei begin to develop, nourished by the cell fluid in which they repose, and finally distend and rupture the parent cells, and assume for themselves the same role.

6. Nutrition is effected in the capillary vessels, which carry on a circulation independently of the arteries or veins, and are controlled by the organic nerves, which impart to them a power to attract cytoblasts, according to their selective or vital affinity. Hence these vessels in a healthy state will not convey to a muscle, a globule of blood adapted only to the construction of bone or brain.

7. The organic or ganglionic system of nerves, presides over the capillary circulation in all the organs and tissues, and hence upon their integrity and healthy action, depend the processes of nutrition, secretion and animal heat. If, therefore, these nerves supplying any given tissue should be impaired in their peculiar functional activity, cytoblasts destined for one tissue, would be thrown upon another, for which they have no affinity, and irritation, prostration or heterogenous growths would result.

8. Tissues, organs, or vessels which are accustomed to the stimulus of arterial blood, for their nutrition, functions or action, when deprived of it, loose their vital manifestations, cease to act and soon pass into a diseased, or moribund state. Hence, the heart and arteries when filled with venous blood, will not respond to its impress and they cease to act.

9. Nearly all the movements of the human organism, which are performed by muscular power, are rhythmical. The action of the heart, lungs and arteries is notably so. In a natural, healthy condition, muscular contractility derives its energy from nervous influence, which is proportioned to the quantum of power requisite to fulfill the demands of circulation, nutrition and secretion. When an irritant is applied to a part, the afferent nerves apprise the *commune sensorium* of the fact, and the efferent branches supply the increased energy to meet the requisition, and exalted activity is awakened in the part. If there be no renewed irritation, the afferent nerves, after a time, cease to experience the impression, or the common centre ceases to respond, and a state of quiescence obtains. Thus the irritability of muscular fibre is exalted and lowered, in proportion to the supply of nerve power, and that rising and falling in rhythmical gradations, develops a universal law for muscular action, viz.: "Exalted muscular activity is followed by a corresponding period of repose." If, however, the stimulus or irritant be renewed, in continuously increasing proportions, the period of exaltation may be perpetuated till vital energy is exhausted, and fatal collapse will supervene.

10. The field of nervous influence, both as to its nutrition and energizing power, is limited by the supply furnished by the nerve centres. And that supply is measured by the area of corporeal development, preserving a due proportion between all its parts. Were it not for this limit of nerve power, the nose or fingers or other parts of a person would grow to indefinite lengths, and there would be no limit to human corporosity. And hence, also, is it the case, when nutrition is perverted in a given part, that morbid growths spring up and grow to the full extent of the morbid irritation which affects the nerves. Thus a scirrhous tumor will increase without producing any other trouble than will result from its mechanical pressure, till it has reached the fullest bounds of nervous influence, when it will begin to degenerate, assume a malignant character, and formidably assail the citadel of life.

11. "Life being the sum of those functions which resists death," the most exalted state of vitality is the natural result of a perfect performance of those functions. All perversion, suspension or exaltation of the vital functions must therefore be disease, whether it be of the nervous, muscular, vascular or glandular system. If the digestion be impaired, the chyme will be deficient or defective; any defect in the quantity or quality of the chyme will impair the chyle; any impairment of the chyle will deteriorate the quantity or quality of the blood; any defect in the blood will impair the nutrition of the tissues; any impairment of the tissues will curtail nervous power, which will diminish the selective influence of the secretory organs, whereby effete and deleterious agents are retained in the blood, and general disorder and derangement will prevail. Thus derangement beginning in one organ is reflected on another, and, one by one, all may be involved.

12. Sympathy may be either nervous or vascular. When any two or more organs are supplied with nerves from a common centre, a profound impression made on one is transmitted to the others by nervous association. Thus indigestible food in the stomach will pervert the action of the heart, and a a draught of ice-water poured into an overheated stomach will often, through the pneumogastric nerve, suspend the action of the lungs and heart and produce instantaneous death. Sympathy is effected through the blood, by a suspension of an important

function, whereby vitiated matters are thrown upon other organs and diseased action is lighted up.

13. "Animal heat is made up of a union of oxygen with the blood in the lungs, the formation of carbonic acid gas in the capillaries, and the oxidation of hydrogen, sulphur, and phosphorus in the system." Whenever, therefore, there is a superabundance of these agents brought into close proximity, there will be a commensurate exaltation of animal heat. The temperature of the system is regulated by cutaneous transpiration, which renders the functions of the skin one of the most important factors in the preservation of health. Whenever, therefore, there is a loss of balance in the circulation and a larger quantity of blood is transmitted to one part than relatively belongs to it, then secretions are impaired or suspended, and heterogeneous blood constituents are thrown together, and animal heat is greatly augmented.

While these propositions contain the sum of my deductions from a vast field of physiological and pathological investigations, made by the most scientific and logical minds which have ever shone in the medical firmament, the facts on which each one is based, are of the most interesting and instructive character, and it would require many pages to disclose their practical bearing and scientific importance. It is, however, deemed sufficient for my present purpose to leave them in their condensed form as a satisfactory prelude to a discussion of inflammation.

Alcohol applied to the web of a frog's foot under the field of the microscope, produces immediate contraction of the capillaries and expulsion of their contents, causing an exsanguined or pale appearance. In obedience, however, to a law of muscular contraction, they relax correspondingly with their contractile force, and they are immediately filled *a tergo*. Their sensibility being augmented by the artificial stimulus, they respond with increased energy to the natural stimulus of the blood, and quickly expel it. A vacuum being thus formed more speedily and capaciously than in the neighboring vessels, a larger volume of blood naturally rushes into them. This increased quantity conveying a larger amount of vitalizing energy, augments still more the organic sensibility and increases the contractile power. Thus, the sensibility of the capillaries is greatly augmented, their action is increased, and the quantity of blood passing through them is multiplied. This is what I would term the first stage, or incubative inflammation.

While this augmentation of capillary action and increased vital energy is drawing blood to and concentrating excitement in one part, the neighboring capillaries, deprived of their quantum of nutritive pabulum, create two sources of demand, viz.: the vital requirements of the part and the abnormal vacuity of the vessels make a demand for a fuller supply. The neighboring arteries being called on to fill the order, send back the requisition to the heart, and these, all responding, hurry the vital current through all its intricate channels, accelerating the pulsations and destroying the balance of the circulation. As an inevitable result corpuscles of blood destined for one organ or tissue are hurried upon other and dissimilar ones, secretions are suspended, nutrition is arrested, new cytoblasts bursting from their old matrices accumulate in the blood, fibrin rapidly augments, sensibility is exalted, pain shoots through laboring organs and tissues, heat arising from the rapid chemico-vital changes finding no channel for escape accumulates, and we have inflammatory fever.

In obedience, however, to a law of muscular motion, viz.: "an exalted degree of activity is followed by a corresponding period or degree of repose," the capillaries which were so inordinately excited soón begin to contract with less and less energy, and the blood moves more sluggishly through them, while the aroused *vis a tergo* is yet pouring an increased volume of the vital tide upon them, which they can no longer bear, they cease to act, their yielding coats expand, and congestion and stasis ensue, producing the second stage, or that which I would call passive inflammation.

When the point of irritation is circumscribed and the sympathetic developments are comparatively local, the serum of the obstructed blood often passes out by exosmosis into the surrounding cellular tissue, the vessels contract, the buchan is driven onward and out, and the circulation is restored and resolution is effected. If, however, despite the exosmosis of the serum, the neighboring arteries continue to pour a full tide upon the passive capillaries, they soon yield to the fullest extent of their capacity and permit their contents to pass out by exosmosis, or, most generally, the integrity of their coats is overcome and the obstructed blood is extravasated into the surrounding tissues, causing redness, heat, swelling and pain, and what we denominate active inflammation.

The presence of so greatly increased quantity of blood in a part, surcharged with red globules, produces redness. The molecular changes, and chemico-vital activities, exalt the temperature; the increased sensibility accompanying these exalted vital changes and pressure upon the sensory nerves, cause the pain, while augmented accumulation produces the tumefaction. The obstruction thus presented to the circulation, and the aberration from a sound physiological condition, cause the surrounding vessels to sympathize with the local trouble, and the inflammation is diffused.

So soon as the extravasated fluid comes to rest, coagulation of the fibrin begins, and a new chain of vital manifestations is developed. Selective affinity causes the cytoblasts to arrange themselves in rows, in their longitudinal diameters, while the development of the nuclei soon causes a rupture of their sacs, one into the other, and thus new channels or circulating media are opened through the coagulum, whereby nutrition is imparted, effete matters are removed, and the circulation being restored, reorganization and resolution are effected.

If, however, there be a partial obstruction of the lymphatics and veins, the supply is often greater than the demand, and organization progresses faster than the waste, and we have an indurated structure.

Should, on the other hand, the waste be in excess of supply, the vital cohesion will be diminished and softening will result.

During the process of reorganization, should the obstruction to the circulation be so great as seriously to interfere with the supply of nutrition to the effused mass, then the cytoblasts, within the coagulum, while passing through the various stages of cell development, will be arrested in their growth, and having reached a stage approximating their

highest degree of organization short of rupture, they cease their evolution, become pale, corrugated and flabby, and become pus globules. In this way abscesses are generated.

When the disorganization is so complete, the arrest of circulation so perfect, and organic nerve influence so entirely arrested as to destroy all the vital activities in the coagulum and surrounding tissues, we have mortification.

Should the inflammation be of a diffusive and passive character in a serous membrane, the vessels, ever struggling to relieve themselves by an exosmotic discharge of serum, will produce a dropsy.

In accordance with these physiological and pathological principles, the cause and growth of tumors, mild and malignant; furuncles, carbuncles, diphtheria, erysipelas; intermittent, continued and typhoidal fevers; tubercles, eruptive fevers, and almost every abnormal condition to which our flesh is heir, may be scientifically and satisfactorily explained. But the want of space precludes further application for the present, and permits me only to express my fear that it has in many instances induced me to sacrifice perspicuity to concentration.

Viburnum Prunifolium—Its Medical Uses.

By F. C. Herr, M. D., Philadelphia, Pa.

VIBURNUM prunifolium is destined to take a foremost rank in the list of agents adapted to the effectual treatment of the various forms of dysmenorrhœa. After a considerable experience with it in every form of this most intractable disease, I can speak with confidence regarding its efficiency. As in the case of other remedial agents, the degree of success attained with viburnum in the relief and cure of dysmenorrhœa, must be largely influenced by concomitant conditions. A diversity of causation being operative in its production, or a multiplicity of causes working together in the production of the same results, it behooves the physician to carefully discriminate these underlying conditions, that he may with scientific accuracy determine positively the potency of a therapeutic agent. Thus he will be enabled to map out with distinctness, the range of application of a given drug. It is too often our ignorance of the elementary conditions of disease, that defeats the purpose we seek to attain in the administration of a remedy. Among the causes which are accounted fruitful in the production of dysmenorrhœa, we may mention flexion of the uterus. This deformity, by inducing compression and construction of the uterine canal, interposes mechanical obstruction to the escape of the menstrual fluid. It is obvious that the degree of suffering in this obstructive variety of dysmenorrhœa must be proportioned to the contractile energy of the uterus, and the degree of resistance which must be overcome in the expulsion of the uterine contents. This form of dysmenorrhœa, Dr. Graily Hewitt considers the most frequent. It is almost needless to affirm that viburnum cannot cure these cases. It will, however, afford the sufferer very marked relief, and this indicates the influence which it possesses over pain *per se*. Let any physician administer viburnum prunifolium in dysmenorrhœa occurring in the history of a uterine flexion, and he will find the relief speedy and pronounced, but let him eliminate from his cases those in which surgical interference is demanded, and he will seldom fail in securing beneficial results, results more satisfactory than any other one agent will yield. My note book contains the records of the following case:

Case 1.—Mrs. H., æt. 36, applied to me November 20, 1882, for advice in relation to the probable relief I might afford her in her approaching menstruation. She was a resident of Lexington, Virginia, and was here temporarily on a visit to friends. I elicited from her the information that her catamenial epochs were marked by excruciating pain, that under the advice of her physician she had taken everything —"a drug store"—she said, without comforting relief. She could not take opium or its alkaloids on account of a peculiar idiosyncrasy. I thought of aconite, belladonna, cimicifuga, apiol, nitrite of amyl, croton chloral and many other agents which often avail much in dysmenorrhœa. The patient remembered that she had taken some of these. I took from my shelf a vial of viburnum prunifolium fluid extract, and wrapping it up handed it to my patient with the instructions that a teaspoonful should be taken every four hours, beginning one day before the expected menstruation, and continuing at longer intervals, throughout its history. She reported to me after the cessation of the period, that she experienced much relief from the remedy, that her suffering was rendered tolerable, and that she had not endured so little pain during menstruation for a long time.

In another month she again sought my advice. Remembering the great benefit derived from the former administration of viburnum in this case its use was again advised, not, however, singly, but in conjunction with piscidia erythrina. The relief which followed this combination was prompt and complete. It might be objected that this was to be expected where dogwood was administered, as one of its specific effects is the relief of pain. I am quite willing to divide the credit of the beneficent action between the two agents, but I am sure that neither one alone would have secured the same result. I have more than once administered dogwood in these conditions with only partial relief. My note book does not contain the records of a single case where viburnum and dogwood jointly failed to restore comfort to the suffering one, or to completely relieve her. But the most interesting and instructive chapter of this history remains to be told. I was so highly gratified at these results that during the interval of the succeeding menstrual periods I advised that a half-teaspoonful of viburnum should be taken three times daily. This was done. The next menstrual period was a painless and normal one. There has been no repetition of the history of suffering since then, and I believe this woman has been cured by the use of viburnum prunifolium. It is proper to say that no displacement or flexion of the uterus existed in this case.

From my note book I might extract the records of many cases with a similar history—a history of long continued suffering effectually terminated by the use of viburnum.

Case No. 2.—Miss S. consulted me Dec. 25, 1882, for the relief of pain during her menstruation. I had prescribed for the same condition—on previous occasions—in this patient. Sometimes I so far succeeded in blunting her sensibilities that she enjoyed freedom from pain in a state of unconsciousness.

But this was not agreeable to her, and when she came to me Dec. 20th, I resolutely set aside the much used and much abused narcotics, and hopefully turned to my new acquaintance for assistance. I was not disappointed. Its administration this time as before was followed by happy effects. First came relief, then cure. This patient endured much suffering. Her mother told me it was agonizing to see her suffer. She is cured to-day. I might multiply examples, but let these suffice. They all illustrate the power this agent possesses in relieving the pain of dysmenorrhœa and in effectually curing it. It will not always succeed, but no agent known to the clinician will so often yield such satisfactory results. Select those cases in which there is no marked uterine displacement or distortion, and it will seldom fail. Even in conditions of inflammation of the mucous membrane of the uterine organ, associated with dysmenorrhœa, viburnum will be found practically valuable.

It is obvious that a drug which possesses such virtues must be capable of a wide range of application in therapeutical science. It remains to be seen how far this limit of usefulness shall extend. I would not claim for viburnum a distinctively ecbolic action, but it possesses great efficacy in the treatment of after-pains arising from the retention *in utero* of blood clots.

The expulsion of these clots is facilitated, and the process of evolution promoted by the administration of viburnum. These effects I attribute to a general uterine tonic action of the drug. Unlike ergot, I do not think it possesses a selective action upon unstriped muscular fibre. It would seem in many examples to accomplish similar results by a different *modus operandi*. There is a form of uterine disorder which frequently obtains under the neglect of the physician. I refer to subinvolution of the uterus. Every one who has had any experience with this type of disease knows how difficult are these cases to cure. There is the history of disturbed menstruation, of metrorrhœa, of failing health. Beside it is the knowledge that the physician is very often baffled in his endeavors to correct these conditions. Now let him add to his weapons this new remedy, and let him faithfully persist in its use, and he will find his power of control over this disease much more complete than formerly. I have found viburnum valuable in the treatment of dysmenorrhœa —always modifying the pain—often effecting a permanent cure.

To recapitulate: I have found viburnum prunifolium of signal service in after-pains. In subinvolution, in metrorrhœa, in uterine dyskinesia, in reflex nervous disturbances of the uterine organ, it will always do some good—often restore the patient to comfort. It must not be expected that before this remedy these diseases will pass away as under the influence of a magic wand. Persistence in its use, and large doses are the requisites of beneficial action. Viburnum prunifolium is my last best friend.

721 South Twenty-second street.

A Case for a Diagnosis.

By J. Tyrone McElroy, A. M., M. D., Bell, N. Y.

NO disease with which the physician has to deal tends more certainly to a fatal termination than tubercular meningitis. Dr. Flint teaches that the only hope is in a mistaken diagnosis. But in Reynold's system, while leaning to the same idea, Dr Hartshorne relates a case of recovery from what was as certainly this disease as symptoms can make it In J. Lewis Smith's work on diseases of children recovery from the first stage is said to be possible, and a quotation from Guersant implies that even the second stage is not absolutely hopeless. Cases of recovery from a sickness whose symptoms might fairly lead to a diagnosis of this fatal disease, are, under the circumstances, not unworthy of a record. The following case may not have been tubercular meningitis, but it was so very like it that death only seemed wanting to confirm the diagnosis.

O. D., girl, æt. 14 months; very small and feeble at birth; had a severe bronchitis when 11 weeks old; measles at seven months, followed by abscesses at the back of the head and inflammation of the bowels, terminating last summer in true cholera infantum, the temperature reaching 106°. Cough persisted with frequent exacerbations during the fall of last year, and profuse sweats, fever and capricious appetite, loss of flesh and pallor seemed clearly to indicate phthisis. Physical examination of the chest was never satisfactory; there was, however, undoubted dullness over the left lung.

A sister of this child died at fifteen months of a sickness of which I could learn nothing save that it was marked by vomiting and obstinate constipation. The only other child of this family is a boy, who is undoubtedly tuberculous.

In the beginning of January of this year the cough became worse; vomiting and constipation persisted, notwithstanding treatment addressed to the stomach. I was sent for on the 13th. The following is the record of the case:

January 13th, 1883.—Looks very sick, brows frowning, cheeks flushed, anterior fontanelle prominent and throbbing violently. Is very peevish and avoids the light. Vomiting constantly—a sudden gush, neither preceded nor followed by retching. Tongue red at tip, brownish fur on dorsum; mouth healthy looking; no swelling of the gums. Abdomen flaccid; no apparent pain on pressure. Chest, nothing more pronounced than has been for some time. Coughs considerably. Temperature 100°; pulse 120. Feeds greedily. Urine has been very scanty for some time; no œdema; constipated. Ordered calomel gr. i, and bismuth and pepsin.

Evening.—Drowsy, starting up and screaming at intervals, immediately relapsing into somnolence. Cheeks cold though flushed; back of head very hot. Pulse irregular, 110. Vomiting as before. Ordered ice bag to head; hot bottle to feet; bromide of potash gr. ij every two hours. To be fed alternately with milk and lime water, and broth made with Johnson's fluid beef.

January 14th.—Seems unconscious; at intervals the body is thrown backward, resting on the head and heels and a piercing scream is uttered; immediately she sinks back silent and motionless. Pulse 110.

Evening—Unconscious; cheeks cold with transient flushings; takes everything that is put to the lips; abdomen hollow; pulse very irregular, 72—90; respirations irregular and sighing, Pupils widely dilated, do not respond to light. Fontanelle very prominent. Has ceased vomiting. Cough frequent.

January 15th.—Now looks well; had two convul-

sions during the night, one unilateral, the other general. Was then thought by the bystanders to be dying, but has since much improved. Cheeks flush occasionally. Pupils unequal, right responds to light, left does not. Can be roused to consciousness. Continues, but more rarely, the sudden scream and arching. During my stay, several times shivered and breathed heavily. Pulse 90, one slow, then several quick beats. Temperature 101.5.° Urine abundant; bowels moved once.

Evening: Has steadily improved during the day; both eyes respond to light and she is undoubtedly conscious. Has ceased screaming but worries continually. Is still eager for food; fontanelle falling; face calm and painless looking. Bowels moved twice during the day; urine abundant. Pulse 95 with the same rhythm, temperature 100.5°; no vomiting; treatment still continued as at first.

January 16th.—Still improving.

Evening, Not so well; drowsy; fontanelle throbbing forcibly. Face has a dusky hue. Temperature 98°; respirations 32; pulse 85.

January 17th.—Still conscious but very drowsy. Calling her name frequently causes her to cry as if annoyed, but brings no look of recognition. Pulse 96, temperature 68.5°, still coughing. Treatment as before.

Evening: About the same. Pulse 120. Bowels moved by a suppository.

January 18th.—Much brighter. Pulse 120, and regular, temperature 99°, respiration 40. Wakeful. Does not take food as readily as before.

Evening: Improving.

January 19th.—Quite conscious. Refuses food. Restless. Pulse 140, regular, temperature 98°. Fontanelle still somewhat prominent. Abdomen natural. Very peevish. Tongue heavily coated. Ordered calomel gr. j at once. Bismuth and pepsin alternately with the bromide, each every four hours. Fed in small quantities every two hours. Ice-bag and hot bottle continued.

January 20th.—Conscious and very restless.

January 21st.—Wakes up cheerful, plays for a while and then gradually worries into a screaming fit. Pulse 120, respirations 24, temperature 98°. Stop ice-bag. Continue bromide and hot bottle to feet. Give elixir calisaya ʒ ss, ter die.

January 22d.—Passed a good night. Cough less urgent; pulse regular 120, temperature 98.5°. Quite lively. Looks wretchedly small and weazened. Fontanelle level with natural pulsation. Ordered bromide gr. ij three times a day. Elixir calisaya continued.

From this time on the child steadily improved under treatment consisting of the compound syrup of the phosphates and inunctions of cod-liver oil. The cough persisted and for a long time the child's disposition was anything but pleasing. Fits of screaming from what seemed pure ugliness were only too frequent. But now, (May) she is as pretty and hearty a child as could be desired, and her temper is as pleasing as her looks. She has still an occasional cough. It should be mentioned that a Crisolene vaporizer was used in the room during the whole sickness as a useful though feeble means of getting an antiseptic to the lungs.

Quaint Formulæ.

By O. C. Farquhar, M. D., Zanesville, O.

IN order that the younger investigators in the field of pharmaceutical lore may have an equal chance with the older ones—those who kept up with the times of half a century ago and more—I send to the Therapeutic Gazette a few old and quaint formulæ, collected from a work entitled "Receipes for Human Diseases, 90 pages, by a very learned, skillful and pious English author. London, June 11th, 1747."

FOR THE CURE OF RHEUMATISM IN THE CORDS, MUSCLES AND JOINTS.

Cure—Take hog's pissle grease one gill, beef's gall half a glass, spirits of turpentine one ounce, simmer them together, then add one gill of cognac brandy.

Use—When it is cold, warm and mix it, and bathe the affected parts at night.

The above is good for bruises and sprains. In rheumatism it generally relieves in about a week.

FOR THE CATARRH.

The root of hellebore, sometimes called Indian poke, pounded fine and sifted, and taken in snuff, provokes to sneezing in a very powerful manner, and is good for the catarrh. It has relieved from craziness when the brain is pressed by a stoppage.

SPOTTED FEVER.

When the spotted fever was about, one man gave command to lay on mullein leaves wet in warm water all over him, with the upper side to him, which is drawing; the other side is driving. Thus they did and he was struck senseless, and he was cured.

A CURE FOR CORNS.

Take house leek, jam it up and bind on.

FOR DEAFNESS.

Take a little bunch of sage, wrap it up in rye dough, bake it in the oven, not too hard; pick a little hole open against the sage, and by means of this press the steam into the ear.

TO CURE THE EARACHE.

Black sheep's wool dipped in rum and put in the ear is good. Black negro's wool dipped in rum is much better. If you have not rum dip it in good vinegar.

FOR THE MOTHER COLIC—IT IS SOMETIMES CALLED HYSTERICK COLIC.

Take a limb from the most pleasant sour apple tree, as big as your little finger; take the bark of this for six inches; put it into a teacup of boiling water, or a little more, setting it off the fire, stirring it while it comes the color of weakish tea. Take one teacupful and give it to the person, and it will produce fearful feelings, working a real cure.

FOR WEAKNESS IN MEN, OR FEMALE WEAKNESS OR WEAKNESSES.

Take two or two and a-half pails full of double tansy closely packed in a pot; put it on a tin still, draw out two quarts of essence, add a quarter of spirits or less, so as to keep it; cork it up. Take a glass at a time, half an hour before eating, two or three times a day, and thus continue until you take a quart or more. If you use single tansy you must use twice the quantity above mentioned.

FOR THE AGUE BY HURT, OR OTHERWISE.

Take fresh cow-dung and fresh hog's-fat, simmered together so as to mix them well. Bind it on warm a few times, until it draws the ague out, This is powerful, and in a bad ague has given relief, and is considered most certain.

ON WORMS.

Doctor for worms in the increase of the moon, when their heads are up, so that they will eat the medicine; rather in the first part of the increase if possible.

The learned author of the above makes the following declarations in his preface to the work from which I quote: "The passions have a greater influence on health than most people are aware of. All violent and sudden passions dispose to or actually throw people into acute diseases. The slow and lasting passions, such as grief and hopeless love, bring on chronical diseases. Till the passion which caused the disease is calmed, medicine is applied in vain. The love of God, as it is the sovereign remedy of all medicines, so in particular it effectually prevents all the bodily disorders the passions introduce, by keeping the passions themselves within due bounds. And by the unspeakable joy and perfect calm, serenity and tranquility it gives the mind, it becomes the most powerful of all the means of health and long life. London, June 11th, 1747."

The readers of the THERAPEUTIC GAZETTE can draw their own conclusions as to the progress that has been made in therapeutics since the above formulæ were offered to the afflicted by the "truly pious and skillful English physician."

Poisoning by Cove Oysters.

BY J. A. MOODY, M. D., JUNCTION CITY, OHIO.

A CASE of some singularity having occurred within the limits of my practice, and thinking that it might not be devoid of interest to the many readers of the THERAPEUTIC GAZETTE, I have concluded briefly to give its history, treatment, etc.

On the evening of the 5th ult., I was called very hurriedly to see P. D., a rather healthy young man, farmer, æt. 27 years. The messenger desiring a speedy "get there," told me that "Patrick was unconscious, and, as they supposed, dying." When I arrived at his house, a distance of two miles, I found him suffering with violent convulsions and total unconsciousness; cheeks flushed and of a bright red color; eyes closed; pupils dilated and immovable; conjunctivæ injected; skin warm; respiration hurried, labored and stertorous, the breath having an odor of whisky. At intervals of a few minutes the convulsions would revive, in which the head was thrown back, the arms raised and rigidly extended, fingers contracted, requiring the aid of two men to restrain him in bed. This state would continue for probably three minutes, after which he would become quiet for ten minutes, only to pass into another of the same severity. The following particulars I received from his family:

In the morning of the day above mentioned, he went to town to mill, ate his dinner at a hotel, and drank two glasses of beer. Returned in the evening at 6 o'clock, feeling quite ill, but able to unhitch his team and get into the barn, from which he was afterward carried, before the violent symptoms began. The desperate character of the case, sprung upon me so suddenly and unexpectedly, and without any satisfactory explanation of the cause of the trouble, left me woefully in the lurch with regard to the best mode of procedure. But feeling confident it was a case of poisoning by some poisonous material being introduced into the stomach, either as food or drink, intentionally or unintentionally, I resorted to emetics in large doses. Within an hour I succeeded in emptying the stomach completely, and upon examining the contents I found what I now believe to have been the cause of the attack, viz., cove oysters. He told me after he became conscious, that he had eaten a can of cove oysters just before starting home in the evening, and that he noticed that the oysters and can both looked dark—in fact, the inside of the can was nearly black—although he noticed nothing peculiar in the taste. After the emetic had ceased operating, the violent symptoms still continuing, I prescribed fluid extract Jamaica dogwood in ʒ ss doses diluted, every half hour, with the view of relieving the convulsions and producing sleep. The relief was prompt and decided. Within two hours after administering the first dose all convulsive movements and pains had ceased, and my patient was sleeping a sound refreshing sleep, from which he awakened some three hours later, perfectly conscious and feeling quite well, considering the severity of the attack.

I visited him next morning; found him still improving. I administered a brisk cathartic and dismissed the case.

I have used the Jamaica dogwood in several cases of neuralgia, and in all cases in which I formerly prescribed the opiates, with the most gratifying results. My experience leads me to favor the administration of full doses of the drug to secure its characteristic anodyne effect, its greatest recommendation being that it leaves none of the disagreeable or untoward effects of the opium and its alkaloids.

A Seeming Case of Cholera Morbus with a Long and Peculiar History.

BY W. H. COLE, M. D., KEWANEE, ILL.

SEPTEMBER 2, 1882, I was called to see Miss W., æt. 20. Found her vomiting and purging, also suffering from pain in the stomach, and cramps in abdominal region and lower extremities. In short, she had the pathognomonic symptoms of cholera morbus. I gave her a hypodermic injection of sulph. morphia, ¼ gr. Left some sub. nit. bismuth powders, five grains each, to be given once in two hours. Patient being very thirsty, I ordered small pieces of ice to be held in the mouth. I expected to hear no more of this case, as I had treated many others about that time for similar trouble. In my hands the injection of morphia for cholera morbus has resulted, nearly every time, in at once arresting the trouble. As a rule, the patient feels almost instant relief, and in a few minutes passes off into a gentle sleep.

September 4th, Miss M.'s mother called at my office and said her daughter had not fully recovered—in fact, was sick at the stomach at times and had more or less pains in bowels. Learning that her bowels had not moved since I saw her, I ordered a dose of rhubarb, expecting as soon

as her bowels moved all would go on to complete recovery. Two days after her mother called again, saying her daughter was some better, yet felt badly at times. On the 9th I was called to see the lady again, and found her quite sick; pulse 120, temperature 102, stomach irritable, inclined to reject everything swallowed, even the blandest drinks. From this time she grew steadily worse for days and weeks. At intervals she would seem to hold her own for a few days, and then after taking a swallow of milk or gum water, she would vomit and sink away, and to all appearance would soon expire. Bowels all the time were loose unless controlled by astringents. She complained of a terrible pain in the cardiac portion of the stomach, all through her sickness. At the end of three weeks she vomited blood and raised more or less every day for weeks—in fact, did not wholly stop till about December 1st. When the bowels moved she passed little save blood—her urine was half blood—or in other words, she seemed to pass as much blood as urine from bladder. During the last nine days of November she took no nourishment by the mouth—simply wet mouth and throat with gum water at intervals of two or three hours. Gave her during this time two teacups of milk by injection in bowel during each 24 hours. From the beginning to the end everything in shape of nourishment, save milk, worked badly. Milk was rejected often, yet without it we must have failed. As to remedies used, I found help in sub. nit. bismuth at times. When hemorrhage was severe, tannic acid always worked nicely. Tried various remedies to correct the formation of gas, yet nothing gave relief except turpentine in small doses (5 drops.) Gave aconite for fever and it acted well. But all through this terrible struggle opium was my stay and anchor. This case recovering after so much loss of blood, and life and death quivering in the balance during so many weeks, is my excuse for sending you this report.

Synopsis.—Taken sick 1st of September—vomiting, purging, cramps and pain. After hypodermic injection of ¼ gr. morphia felt better. Second, third, on to ninth, not sick, but not well. Then for three weeks sick, vomiting, in the end raising blood from stomach; then blood passing almost daily from bowels—every day nearly from bladder. Terrible pain in cardiac portion of stomach. At times abscesses seemed to break and pus and blood vomited. Whole region over stomach and bowels very tender to the touch. December 1st, the patient began to improve, and at this time she is well and has fully regained her usual health. Cause of this trouble in my judgment was walking home (10 miles) and doing the last three or four miles barefooted, as her feet were blistered and she had to remove her shoes.

Stylosanthes Elatior.

By W. N. Cline, M. D., Cuba, Ill.

SOME months ago I noticed an article in the Therapeutic Gazette on the utility of stylosanthes elatior in mitigating the severity of the pains of child-birth. Having under my care at that time several patients soon to be confined, who had on former occasions suffered from unusually protracted labors, I was quite willing to try any safe remedy that promised relief to patients and consequently to myself.

I procured a bottle of the fluid extract of the medicine, prepared by Parke, Davis & Co., and commenced giving it in 15 to 20 drop doses, two or three times a day, commencing about a month before the expected confinement. I had attended one of the patients referred to on two occasions; each time the labor lasted for 24 hours or more, and was quite sharp most of that time.

On the occasion of the confinement following the use of the medicine, I was not able to reach my patient before the birth of the child, her labor having lasted less than two hours. Another case occurring soon after, in which I had used the medicine, terminated so promptly and satisfactorily that I felt encouraged to give the medicine further trial, which I did in five other cases, selecting such as from my personal knowledge or from their history I thought good test cases, and as I think with gratifying results in five out of the seven cases experimented on. I am well aware that it requires trial in numerous cases, of any medicine whose virtues are to be established in a negative manner, the efficiency of a mitigating medicine being more difficult to prove than that of a remedy that is actually certain in its action; and further, that in labor, as in the early days of gestation, many women have not the same experience in any two instances. Yet I must say that from the trials I have given stylosanthes, I have sufficient faith in the medicine to induce me to continue its use in cases where I have reason to anticipate long and tedious labor.

In several instances the medicine had a good effect in quieting the very annoying pains to which some women are subject a short time before term and from its good effects in such cases, I am inclined to think that the medicine can with propriety be considered a uterine sedative and tonic; and in its action, in some cases, it is quite like that of viburnum prunifolium. I am sure the medicine is perfectly safe in the doses I have named, and is worthy of further trial for the purposes indicated in this article.

Manaca.—Berberis Aquifolium.—Jamaica Dogwood.

By F. Foster, M. D., Sandy Hill, N. Y.

AS the effects of this remedy has been highly spoken of by excellent authority, I have used the medicine in two cases of subacute rheumatism with good results.

The first case occurred in a middle-aged man, who had been suffering for some time with articular rheumatism. He had resorted to other remedies and received no benefit from them. Was called to him and gave him the manaca, without any other medicine, in the usual doses. Did not see him again for several days. On my seeing him again, he said that my medicine had done the business, leaving him cured, without a remnant of that disease remaining; he said the relief soon came on after using the remedy.

The next case was one of articular rheumatism. A young lady was attacked with the above disease; the shoulders, elbow and knee joint were principally affected with pain; swelling, with slight fever, of the subacute variety. I gave her a small bottle of man-

aca, with the regular dose, and gave her no other medicine. I saw her again in about ten days after. She said that medicine had cured her entirely, and has had no return of the disease; expressed herself as highly pleased with the remedy.

The results of the two above cases have given me faith in manaca as one of the most efficient medicines that can be found in the materia medica thus far. Its *modus operandi* I cannot fully explain. I have no doubt in my own mind that it operates on the urinary secretion chiefly, eliminating from the system the proximate cause of the disease, and also operating simultaneously on most of the depurative organs. Whatever theory is advanced, there is one thing pretty clear to my mind: it will cure subacute rheumatism.

Berberis Aquifolium.—I have used the fluid extract in a case of skin disease in my youngest daughter with success. I first prescribed Donovan's sol. of arsenic and mercury, with ext. sarsaparilla, with no good results. After receiving the fluid extract berberis, gave her this medicine alone, and in a month's time she was completely cured, and has had no form of an eruption since. It is a medicine exercising a decided alterative action on the skin.

Jamaica Dogwood.—I have used this remedy in several cases where opium was indicated; it has proven salutary in promoting rest, and tranquilizing the nervous system, and I have reasons to be well pleased with the effects of the medicine. I at first used it in half-teaspoonful doses, and increased to three-fourths, up to one teaspoonful, which in my limited experience, is about the right dose to an adult. I have no doubt that this remedy will in a measure take the place of opium, if not in time supercede it in most cases. If so, it would prove a great blessing to the people of the United States, many of whom have contracted the opium habit.

A Novel Laryngoscope.

By Thomas Dimock, M. D., New York City.

ONE of the best methods for examining the throat without the aid of the ordinary laryngscope is the following:

Bring the patient near a good light of any kind, and after the mouth has been opened place on the tongue a depressor, then request the patient to yawn. The larynx will immediately rise up and every part necessary to be seen will be brought fully into view. The nose should be held as this compels breathing through the mouth. Thus the velum pedulum palati is raised, the anterior and posterior pillars become widened, exposing the back of the tonsils and pharynx. The tongue must be pressed downwards very gently as it always resists harsh treatment.

Translations.

[All articles signed "T" are translated for The Therapeutic Gazette by C. W. Tangeman, M. D., Cincinnati.

Gelseminine.

Some years ago Prof. Dragendorff discussed, in a somewhat elaborate essay, the relation between the chemical composition and the botanical affiliations of plants, and showed that plants closely allied to one another frequently contain proximate principles of a similar character. He gave as an instance the occurrence, in the gentian family, of bitter principles free from nitrogen, while certain other nearly related families are characterized by the presence of alkaloids in place of these neutral bitter principles. In the Asiatic species of strychnos, order Loganiaceæ, strychnine is found. In the American species, it appears that the strychnine is replaced by curarine.

Strychnine and curarine show very similar reactions, particularly with concentrated sulphuric acid and potassium bichromate. Prof. Dragendorff throws out the conjecture that alkaloids derived from plants belonging to the same family, as, for example, gelsemine, in spite of their dissimilar physiological action, may be found chemically to be related to strychnine. This conjecture appears to find support in the chemical comportment, not only of gelsemine, from a plant of the same family, but also of quebrachine and geissospermine, from plants of the natural order of Apocynaceæ. All of these alkaloids produce similar color reactions with sulphuric acid and potassium bichromate, although the physiological effects produced by them are very diverse. In case two alkaloids are found in the plant, the second one also may show similar points of resemblance. Thus among the plants that have just been alluded to, nux vomica furnishes brucine, quebracho, aspidospermine and quebrachine, and geissospermum, pereirine, and geissospermine, alkaloids which present striking points of resemblance in their chemical reactions. Brucine and aspidospermine produce with perchloric acid a similar color, and pereirine shares with brucine the well-known property of producing with nitric acid an intense red solution.

Gelsemium sempervirens appears to have been first mentioned in chemical and medical literature about the beginning of the present century. It was described by Prof. W. Procter in 1852, in the American Journal of Pharmacy, and in 1864 was adopted into the materia medica list of the U. S. Pharmacopœia; it appears at the present time to have in that country a very extensive use.

The plant has received several different names, and has been variously classified by botanists. De Candolle referred it to the Loganiaceæ, Decaisne to the Apocynaceæ, and other authors have placed it among the Scrofulariaceæ or elsewhere. In the National Dispensatory it is relegated to the Loganiaceæ, and is called "yellow jasmine"; this name, however, ought to be discarded, since there is in America a true jasmine having yellow blossoms with which this plant is liable to be confounded. In like manner the name gelseminum, which was at first given to this plant, ought to be avoided, since it was formerly applied to Jasminum officinale, Lin. On this ground the name gelseminine, adopted by Sonnenschein for the alkaloid of this plant, should also be rejected.*

In 1855 Kollock first obtained from this plant an alkaloid, which he found most abundant in the root.

In 1870 Wormley described two substances as characteristic of gelsemium, an acid which he named gelseminic acid, and an alkaloidal base.

In 1876 Robbins showed that Wormley's gelseminic acid was really æsculin, a glucoside found also in other plants. He assigned to the alkaloid gelsemine, the formula $C_{11}H_{19}NO_2$.

*H. Merck offers a very impure preparation under the name of "gelsemin," and the pure alkaloid, labeled "gelseminin," an unfortunate and confusing nomenclature.

The last examination of the constituents of gelsemium was made in 1878 by Prof. Dragendorff. He showed that in his method of separating alkaloids, etc., æsculin was taken up from acid solutions by chloroform, also, in small proportion by benzole, while the alkaloid was removed from alkaline solutions in part by petroleum ether, but readily by benzole and chloroform.

Among the interesting questions with regard to the alkaloid gelsemine, that relating to the similarity of some of its reactions to those of strychnine is of the first importance. Robbins states that the behavior of the alkaloid with sulphuric acid and potassium bichromate is quite different from that of strychnine. This statement must not be accepted without qualification. The result of this test depends much on the method in which it is made. If the respective alkaloids are dissolved completely in concentrated sulphuric acid and the bichromate of potassium is them added either in the form of a crystal or of a strong solution, there will be produced in the case of strychnine, a blue color undergoing afterwards a certain series of changes; in the case of gelsemine, there will be no blue color observed, but immediately a cherry-red, frequently with a violet tint.

If oxide of cerium is substituted for the potassium bichromate, the distinction in the coloration is still more striking; gelsemine shows a clear cherry-red color, strychine a violet, which only afterwards becomes cherry-red.

If, however, the sulphuric acid is allowed to flow over a minute portion of solid gelsemine, and a very small drop of potassium bichromate solution is added, there will be produced when the fluids meet streaks of blue which become violet and cherry-red. The phenomena are identical with those observed with strychnine. The conditions are precisely those which are likely to occur in a toxicological investigation in a case of suspected poisoning. In such a case the substance to be tested consists generally of a film closely adhering to the glass, and when the test is made in the ordinary manner, it is almost impossible to discriminate strychnine from gelsemine. The color changes, it is true, more rapidly in the case of the latter alkaloid, and there are often green as well as blue streaks produced, but in the minute quantities and the impure condition in which the alkaloids are likely to be procured in a forensic analysis, one alkaloid would be easily mistaken for the other.

By employing a weaker sulphuric acid the alkaloids, however, may more readily be distinguished from one another and from quebrachine. If a trihydrated acid be employed, the red color produced in gelsemine solutions passes into an intense green or blue-green color, while the strychnine solution changes from blue to vermilion.

The same peculiarity is perceived whether the oxidizing agent employed is potassium bichromate, or the peroxides of cerium, manganese or lead. Quebrachine gives no color reaction when the trihydrate is employed in place of the concentrated acid.

When manganese peroxide is employed as the oxidiser, the color produced by quebrachine never passes into a vermilion red—at most to a dull cherry-red.

Among other reactions of gelsemine the following are especially note-worthy:

Concentrated sulphuric acid dissolves the alkaloid with a yellow-brown color. Quebrachine yields a similar solution; strychnine dissolves without color.

Frœhde's reagent gives with gelsemine a color varying from fawn to reddish brown, which gradually passes into a yellowish green; Græbner has observed a similiar reaction frequently produced by ptomaines.

Sugar and sulphuric acid produce a cherry-red color. The reaction is very delicate. Unfortunately fats, gallic acid, aconitine, codeine and delphinoidine give the same reaction. When gelsemine has been extracted from the liver this reaction is of no value, since other substances derived from the liver accompany the alkaloid and give an identical reaction. Strychnine does not produce this coloration, but quebrachin does.

The reagent employed by Brouardel and Boutmy for ptomaines, ferricyanide of potassium and ferric chloride, gives also with gelsemine an intense green coloration. This is not produced by strychnine, and the ptomaines producing it have not been obtained from the stomach or intestines, but from the liver, kidney, etc., when in an advanced state of decomposition. Quebrachine also gives this reaction.

Of the general reagents for alkaloids, phosphomolybdic acid, or the double iodide of bismuth and potassium are those which indicate the most minute traces of gelsemine; Meyer's reagent gives a distinct indication with 1-20 milligramme of the alkaloid. Picric acid produces a precipitate in a drop of a solution containing 1-1000 of the alkaloid.

In physiological experiments on frogs gelsemine produces effects entirely different from those of strychnine. It paralyses first the sensory and then the motor central ganglia, but does not produce tetanic spasms. With warm-blooded animals the symptoms develop in a different order. The phenomena produced in man are, dimness of vision, dilatation of the pupils, paralysis of the bladder, difficulty of swallowing, and finally death from paralysis of the respiratory apparatus.

A series of experiments upon animals led to the following conclûsions:

After poisoning with the smallest fatal dose of gelsemium root, æsculin and gelsemine can be obtained in abundance, by Dragendorff's method, from portions of the body. Æsculin may be obtained from all the organs; gelsemine in the stomach, intestines, blood and liver.

When gelsemine has been administered in a rapidly fatal dose by subcutaneous injection, it can be recovered only in traces, not sufficient for certain identification; at the best, one may hope to find it in the liver.

During decomposition when an alkaline reaction is developed, æsculin is destroyed, but not gelsemin. As long as the reaction is acid, æsculin also escapes decomposition.

Æsculin takes no part in the toxic activity of the yellow jessamine.

Gelsemine and æsculin are rapidly absorbed from the stomach and intestines, and are soon excreted by the kidneys. The absorption is also rapid when the alkaloid is injected hypodermically.

For complete elimination of æsculin by the urine, there is required considerable time, so that after a single dose it can be found in that secretion for several days.

If gelsemine has been detected in a forensic analy

sis, æsculin should also be looked for in order to determine whether the alkaloid itself or the crude drug had been the cause of death.

Gelsemine may be distinguished from strychnine by its reactions: 1st, with concentrated sulphuric acid; 2d, with sulphuric tri-hydrate and potassium bichromate (or ceric oxide, or the peroxide of manganese or of lead); 3d, with ferricyanide of potassium and ferric chloride; 4th, with sugar and concentrated sulphuric acid.

It is further discriminated by its physiological effects, and by the fact that it is accompanied, in the crude drug, or its galenical preparations, by æsculin.

From quebrachin, gelsemine is distinguished, 1st, by the fact that chloroform extracts the former only from acid solutions; 2d, by the reaction (*a*) with sulphuric tri-hydrate and potassium bichromate, (*b*) with Frœhde's reagent, (*c*) with sulphuric acid containing iron; and, 3d, by the absence of æsculin from quebracho bark.—*Abstract of an inaugural essay by Edward Schwartz, University of Dorpat.*

[Continued from our May number.]

American Drugs—By J. Moeller.

[Translated from "Pharmaceutische Centralhalle," by Augustus Kaiser, A. M., M. D., Detroit, Mich.]

3. FOLIA CHEKAN.

The dried leaves with a few fragments of leaf-stalks.

The leaves are stiff, although not very brittle; the majority, therefore, when received in good condition are very delicately wrinkled, of a bright green color, with a yellowish streak, short stem, somewhat curled at rim, and bald on each side. On the superior surface which to the unassisted eye appears finely granulated, the central nerve is only visible in the majority of leaves; it is only in the larger leaves that secondary nerves may be traced to the circumference. On the lower surface the nerves on all leaves are prominent. The leaves are dotted with transparent points, though in the smaller leaves these points are visible only under the glass.

The leaves are elliptical to oval in shape (Fig. 5),

FIG. 5.

pointed at the top and narrowed at the base; they vary in size (from 1 to 4 cm. in length) although the proportion between the length and breadth is constant (1:2.5). The leaves are quite odorless; on being rubbed between the fingers they, however, emit an agreeable aromatic odor. Their taste is at first purely aromatic but is afterwards strongly bitter.

Microscopic Characteristics.—The cuticle is particularly developed on the superior surface of the leaf; a double row of palisade cells constitutes scarcely a third of the thickness of the leaf; the mesophyll consists of irregularly branched cells in an ordinary loosely arranged parenchyma. Large crystal cells are occasionally found among the palisade cells, but seldom or never in the mesophyll. Globular oil cells (0.07 0.15 mm. in diameter) with yellowish contents, are disposed under the cuticle of both the upper and lower surfaces.

The plant (Myrtus chekan) from which the cheken leaves are gathered, is an evergreen shrub about 2m. high, found in the central province of Chili. It differs from myrtus communis L. chiefly in the fact that its leaves are shorter and broader. Its flowers, also, are composed of but four leaves, are hairy like the calycle leaves, and are rounder than those of the latter. The leaves somewhat resemble smaller buchu-leaves, especially those of barosma crenulata, Hook., but the edges of the latter are indentated and so are readily recognized.

The virtues of chekan leaves reside in the tannin and ethereal oil which they contain. Hutchinson has vainly sought to discover are alkaloid in them (Pharm. Journal and Transactions, 1879, pages, 653). He discovered tannin which would turn blue in the presence of iron salts, and an ethereal oil, volatile at the ordinary temperature, soluble in chloroform, ether, ethyl and amyl-alcohol, insoluble in water, and burning with a bright, white flame.

This plant has long been used in Chili under the name of chekan, chequen or cheken, where it is held to be powerful aromatic and astringent. The juice of its leaves and young wood, diluted with water has been especially recommended as a collyrium. Don reports remarkable cures of dysentery effected by the liquor in which its bark had been steeped.

Dr. Dessauer, of Valparaiso, has recently been making extensive clinical experiments with chekan leaves. He used an infusion (one part leaves with 10 parts boiling water), or an extract (produced according to the method prescribed in the U. S. Pharmacopœia for extracts of cinchona bark), or a syrup (one part leaves and two parts syrup), or finally by inhalation. The results which he has obtained in bronchitis, catarrh of the bladder, and other affections of the mucous membranes, have induced him to ascribe to these leaves tonic, expectorant, diuretic and antiseptic qualities. Linarix (La Ruche Pharmaceutic) attributes these same properties to the oil of common myrtle.

4. HERBA MONARDÆ FISTULOSÆ (WILD BERGAMOT, HORSE-MINT.)

The coarsely-cut dried leaves gathered when the plant is in bloom. The square often violet-tinted stem is almost bare, except that it is quite hairy and somewhat swollen at the points whence the leaves proceed in pairs. These (Fig. 6 *a*) are approximately oviform, somewhat pointed, rounded at the base, short-stemmed, coarsely indentated at the edge, 5 cm. long, 3 cm. broad (those around the flowers being smaller, narrower and contracted towards the stem), with prominent middle and secondary nerves, the latter anastomosing towards the border. The leaves are rather smooth on both sides. The microscope, however, informs us that these leaves are densely covered with small hairs, mostly but .05 mm. in length, and consisting of but a single cell (Fig. 7)

highly interspersed with larger ones, particularly towards the edges, where they often consist of many cells. The scattered spots prove to be indentations in which the characteristic oil glands of the labiæ are to be met with on their short broad stems. The flowers are arranged in dense sham verticils in the shoulders of the leaves, and are encircled by a thick-leaved bristly border. The calycle is nearly a centimetre in length, skinny, tubular, multiribbed five-pronged, ciliated at the edge, naked and smooth on the inside, slightly hairy on the outside, displaying under the magnifying glass yellow glands (or glandular heads). The large double-lipped, flesh-colored flowers are now but seldom found in the calycle.

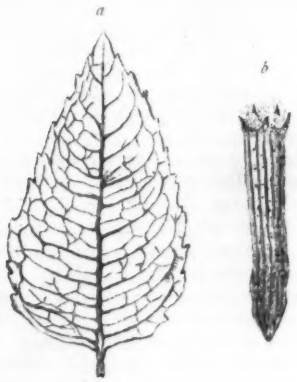

FIG. 9.

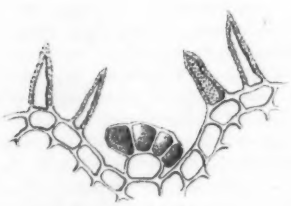

FIG. 7.

The plant when dried has no specific odor; but when pulverized it has a penetrating aromatic odor, resembling peppermint. Its taste is strongly aromatic—almost free of bitterness.

Monarda fistulosa L. is indigenous in the western states of the American Union. It is one of the plants most frequently met with in the territories of Montana and Dakota. It is nearest akin with the rosemary family. It is now about three years since wild bergamot (called also horsemint) was first applied as a curative. It was resorted to in cases of intermittent fever instead of quinine.

Dr. Woodward's (THER. GAZ., 1880, p. 224,) reports of his experiments are as follows: "I found that a drachm of the fluid extract (as prepared by Parke, Davis & Co.) every three hours, from the time of the height of the fever to the end of the attack, or until a prickling sensation is felt throughout the body, or profuse sweating sets in, is the most appropriate dose for adults. In cases of simple intermittent fever, without any complications, this remedy has never disappointed my expectations, and I prefer it to quinine or any other febrifuge."

Dr. Woodward, however, does not undertake to call monarda an infallible specific for fevers, but maintains that it is well worthy of the careful notice of the medical profession.

5. HERBA FRANKENIÆ GRANDIFOLIÆ (YERBA REUMA).

The drug consists of all that part of the plant above ground, gathered at the time of blooming. The stem is round, the leaves are disposed in alternate pairs opposite one another. They are ladle-shaped, fleshy, smooth-edged and with but a single nerve. At first they are hairy, as are also the calycles and yonngest shoots, but as the leaf grows older it becomes smooth, except at the base, where a few remaining straggling hairs give it the appearance of being slightly ciliated. Each leaf-sprout ends in a flower (Fig. 8), and the shoulders of the terminal

FIG. 8.

blossom are generally furnished with two flowers, which are in reality sprouts of a higher order, with contracted internodes. The terminal two pairs of leaves form a border around the tubular four-ribbed and four-fold indentated cup from which the four pale-red blossom leaves scarcely protrude at all.

The plant when dried has a greyish-green color, similar to the oil-willow (Elæagnus), but less silvery. It is odorless and tastes salty, owing to an external saline incrustation, freed from which the plant proves tasteless.

The family of Frankenia, to which the yerba reuma belongs, is the only representative of the order of Frankenaceæ to which the indigenous families of cystinaceæ, droseraceæ and violaceæ belong. Frankenia grandifolia (Cham. & Schl.) is indigenous to the sea-coast of lower California where grass grows but in winter. It is found even on the mountain slopes. It is a small, scrubby plant, having a short stem with but few branchlets, and is about 15cm. in height. It is vulgarly known as "river grass" and was known to the early Spanish settlers as being capable of affecting the mucous membranes, a quality which it owes to the tannin and sodium salts which it contains.

Prof. Carl Jungk (THERAPEUTIC GAZETTE, 1882, page 60) found:

Tannin forming a bluish precipitate with iron salts, nearly	6.000 per cent.
Chloride of sodium	28.048 "
Chloride of magnesium	1.350 "
Sulphate of lime	1.474 "
Sulphate of sodium	2.547 "

It is claimed that the liquid extract, properly diluted, which this plant furnishes, is used with satis-

factory results in cases of chronic catarrh of the nose, fluor albus and gonorrhœa, in its latter stages. It has also been given internally for catarrh of the digestive organs, but as yet the results obtained in this direction are not very definite even to the Americans.

6. FOLIA JACARANDÆ PROCERÆ. (CAROBA.)

The dried, well-preserved leaves are bright-green or brown in color, varying in form and size, but in no other particular, and therefore evidently all belonging to the one family. They are inclined to de-

FIG. 9.

velop symmetrically, particularly towards the stem. They are more or less leathern, slightly bent downwards at the edges; the upper surface is smooth, the lower covered with a velvet-like covering, particularly towards the edges and along the nerves. The leaf-stems are very short, whilst the secondary nerves form slight anastomoses towards the rim of the leaf.

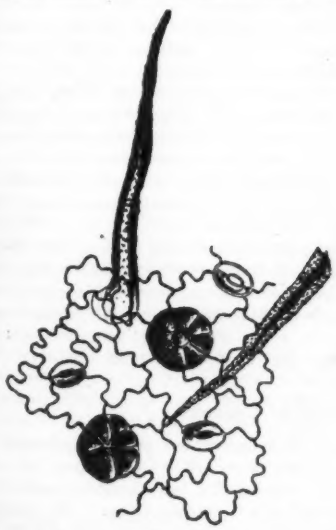

FIG. 10.

Microscopic Characters.—The cuticular covering on the upper surface of the leaf is several times stronger and thicker than that on the lower surface. The pallisade layer is single, the mesophyll rather thick. The epidermis (Fig. 10) is, on both sides, composed of large irregular cells with many pores on the lower surface. These leaves are characterized by two kinds of trichomata which occur on both sides.

Jequirity.

Jequirity belongs to the family Laqumireo, and is indigenous to Brazil, where it is a remedy among the laity for the cure of trachoma and inveterate pannus. The directions for the use of this drug was to take 32 of the seeds and pulverize them, add 500 grm. of cold water, and macerate for 24 hours; then add 500 grm. hot water, filter when cooled, and with this infusion the eye was bathed several times a day until sufficient irritation had been set up. After the first application, irritation of the conjunctiva can be noticed; on the second, there is a severe inflammatory process present, the eye-lids are œdematous, and a watery secretion escapes from the angles of the eye. The period of irritation continues for three days, causing sleeplessness, fever, and severe pains in the heart. Now a period of suppuration sets in, lasting from 5 to 15 days, when it gradually ceases and the patient is freer from his pannus and granulations. This is a description given by V. L. de Wecker of the action of jequirity by one of his patients. W. accordingly made a series of experiments and arrives at the following conclusions: (1) An ophthalmia of a purulent croupous nature can be produced, and its intensity regulated by the number of applications and the strength of the infusion. (2) Jequirity ophthalmia undoubtedly cures granulations, even if it must be applied a few times; it is certainly more pleasant and safer than the old method of inoculation and requires no after treatment save ordering the patient to remain in a dark room for 8 to 12 days. (3) The cornea is in no danger whatever, even if the inflammatory process is severe, but the treatment cannot be an ambulatory one.

Until now there have been no results published by other observers, and W. stands alone in his assertions, but his authority is such that no one would hesitate to use the drug on his recommendation, and certainly before long his results will be verified by other ophthalmologists. "There has been no special demand for jequirity at Prof. Seely's eye and ear

clinic, not because there was a scarcity of material, but because we have other remedies fully answering the purpose, and pleasant to the patient. The result is not quite so rapid as that claimed by de Wecker, but certainly safer. The patients are treated daily by an instillation of a solution of sul. eserine, and an application of yellow oxide of mercury two per cent., with results that do not even awaken a desire for a better remedy."—*Centralblatt f. die Gesand Therapie.* T

Iodoform in Spray Form.

The use of iodoform as applied to wounds as a dressing, by means of the alcohol or ether spray, has been closely investigated by P. G. Unna, of Hamburg. The author's results were so satisfactory with this method of applying drugs, that he used quite a number of remedies in different diseases in the same manner.

The objection to the use of iodoform as a powder, is mainly due to the unavoidable toxic symptoms that arise in nearly all cases where an extensive surface is dusted over. Nor can its action be limited when untoward symptoms have set in, especially if the powder has been thrown into a cavity.

The advantages claimed for the method of dissolving a drug in ether or alcohol, and then applying it by means of a spray, are many and important: 1. The spray has a tendency to relieve pain. 2. The surgeon can reach parts that are inaccessible when a liquid or powder is used. 3. The medicament is not wasted as by the other plans of treatment.

In the following pathological conditions the spray is especially indicated: Inflammation of mucous surfaces (post nares), pharynx, urethra, rectum and vagina, especially in mucous surfaces where the excretions have a tendency to wash the medicament away. Chrysophanic ether spray may be employed in herpes tonsurans, favus, sycosis parasitica and psoriasis capitis. Hydrate of chloral, in spray form, acts very kindly as a local anæsthetic, where minor operations are to be performed. The collodion is applicable in cases where the drug will not adhere to the surface that must be treated; the remedy is applied first, then coated with the collodion spray, which, by evaporating, forms a covering. The following remedies are soluble in ether or alcohol: Salicylic acid, benzoic acid, acetic acid, chrysophanic acid, pyrogallic acid, citric acid, carbolic acid, atropia, codein, digitalin, santonin and all the alkaloid of cinchona, etc. Boracic acid, gallic acid, arsenic acid, oxalic acid, tannic acid, nitrate of silver, acetate of lead, chloride of zinc, caustic, potash and a few others are soluble in alcohol only. This table is given by the author as a guide, since he thinks the treatment of wounds by the spray has a brilliant future.—*Deutsch Med. Zeit.* T

Kairin.

The real name of this new drug is oxychinolinmethylhydrate ($C_{10}H_{13}NO$) on account of its combination, but Fisher and König called it kairin for brevity sake.

The sulphate is a yellowish-brown powder readily soluble in water and has a salty and aromatic taste.

At the Erlanger Clinic experiments gave the following results: A dose of 0.3 grm. when given but once has no effect at all on the temperature; 0.5—1.0 grm. given once causes a decline in temperature amounting to ½—2°C. This effect begins about 25 minutes after the administration and continues, when the former dose is given, two and one-quarter hours, and when 1.0 grm. is given it lasts three hours. Immediately after the action has passed off the temperature again rises.

If the second dose is given before the effect of the first has passed off, the decline is rapid. 0.5 grm. given every hour causes the temperature to run down to 37.0—36.5 after the fourth dose.

In pneumonia the patient feels very comfortable after the disappearance of the fever, but the temperature must be kept down, and this can be done by giving 0.75 grm. every two hours as long as the disease continues.

Author advises that certain precautions be taken when given to old and decrepid individuals, not to increase the dose to more than 1.0 grm. every two hours. Otherwise cyanotic symptoms will set in. The urine takes on a dark green color. There is another drug called kairolin, but this is not in use long enough to give any definite results.—*Berliner Klin. Wochenschr.*, 45, 1882. T

Convallaria Majalis—Par H. Despiat.

Convallaria majalis formerly enjoyed a good reputation as a remedy in headache, but later it fell into disuse, and was only employed in Russia by the peasants as a diuretic. Recently Bojojavlenski and Troitski (1880-1881) made some observation with it on the heart action and the blood pressure. Sée lately recommends it very highly in diseases of the heart.

D. employed the extract of the plant in doses of 1,0-1,5 pro die in valvular troubles during the stage of disturbance of compensation, in kidney affections with hydrops and in cirrhosis of the liver. His results are as follows:

1. Convallaria majalis has a positive action on the heart and kidneys as mentioned above by Sée and the two Russian authors.

2. In insufficiency or stenosis of the mitral valve with arythmia and hydrops, it lessens, regulates and strengthens the heart's action, and causes an abundant diuresis in the course of 2—3 days.

3. The diuretic action is much weaker in disease of the kidney, and is entirely absent in all other diseases.

4. The use of convallaria majalis must be discontinued in the course of 8 to 10 days, since when the drug has been administered for that length of time its action is the opposite, instead of strengthening the heart a toxic weakening sets in.—*Journal de Sciences Méd. de Lille*, 20, 1882. T

Tannate of Cannabin.

Since the action of our present hypnotics are not always very satisfactory when used, we certainly should welcome the introduction of new remedies whose action is to produce sleep. The latest prominent hypnotic that has been introduced is the tannate of cannabin (cannabinum tannicum). It is manufactured from Indian hemp, on which it is dependent for its hypnotic properties, but when used in the above form, its action is found to be very much

changed. It is powerful, yet mild. Its use is perfectly safe. It does not disturb the secretions, and when properly administered does not cause any symptoms of intoxication. Tannate of cannabin is a yellowish-brown powder, with a pleasant odor, but a bitter tannin taste. It is insoluble in water or ether, but on the addition of a small quantity of an alkali, it is rendered very soluble. It can be employed subcutaneously, while the extract of hemp cannot be administered in this manner, since it nearly always sets up phlegmonous processes; the poisonous principle of the hemp seems to disappear on the addition of tannin. It can also be administered per os, rubbed up with a little sugar, which makes it quite pleasant to take. The sleep that this remedy produces is quiet and refreshing, leaving no unpleasant symptoms the next morning. The action of the pulse and temperature was not specially observed by the author.

We hope that this drug that has been so carefully tested will soon be placed in the market, so that it may be obtained in any apothecary; it will certainly introduce itself, unless the difficult process of preparing will cause it to be high-priced.—*Memorabil.*, May, 1882. T

Papayotin in the Treatment of Diphtheria.

Wurtz and Bouchut first called attention to the juice of papaya as a solvent. It digests all kinds of albumen, casein and fibrin in a remarkably short time and reduces them thoroughly to peptones. Rossbach reasoned in this manner: Since papaya is an active solvent, its application to the false membrane in diphtheria cannot but act pleasantly. He was the first to use it and advocate its use in this disease. According to his suggestions Drs. Kohts and Asch introduced it at Strassburg in the clinic for children. A five-per-cent. solution was applied locally by means of a soft brush in quite a number of cases, with admirable results. In such cases where the disease had progressed so far that tracheotomy was the only alternative, 3 or 4 drops of the above solution was dropped into the trachea every 15 to 30 minutes. When the false membrane was thick and spongy the remedy acted rapidly and very satisfactorily, but when the thickening was due to an infiltration the application was simply a waste of time. The following is a short resumé of the authors concluclusions:

1. Diphtheritic membranes of the nose and throat are detached very readily by the application of a 5-per-cent. solution of papayotin, and is then easily expectorated.

2. Bad results to the mucous membrane never followed its local use.

3. Kohts and Ash do not claim this drug to be a specific in diphtheria, but they claim that when used in time the spread of the process can be prevented and the frightful mortality rate of this disease cut down considerably.

Blatta Orientalis.

T. Bogolomow first introduced the above remedy some years ago. Since then a number of authorities have confirmed the results and observations of the author (Frohnmüller, Spulski, Keller and Rohrer) while some few, on the other hand, Wyschinsky, Paul and Boudais, deny its action.

The following is an abstract of B.'s results during the past six years, which extended over a series of 70 cases of hydrops.: In 52 cases it was due to disease of the kidneys, in 15 due to disease of the heart and in three to disease of the liver.

In all of these cases blatta acted admirably without causing any of the slightest symptoms of intolerance. In 19 cases it caused profuse sweating, in 62 cases an increase in the urinary secretion and in 13 cases it increased the already existing diarrhœa.

Concerning the form of the drug to be used, the author used it in the form of powder in 29 cases, and in the other cases the tincture was used. The tincture is to be preferred since the powder becomes inert unless excluded from the air and light. The dose of the tincture for an adult is one teaspoonful three times a day, and 20 drops for a child, according to its age. Blatta given subcutaneously is very highly recommended in uræmia.—*Arbeiten der Gesellschaft für Russ. Aertzte.* T

Chinolinum Tartaricum.

Dr. Ssudeikin reports a series of experiments, that were made on animals (14 in number) with the above drug, and the following is a short abstract of his results:

The action of chinolin is the same on warm blooded as on cold blooded animals; it acts as a poison, and mainly on the central nervous system especially on the spinal cord and medulla oblongata. The excito-motor centers of the heart are also somewhat affected. It causes a considerable reduction of the temperature. After an injection of chinolin, paralysis of the extremities occur, the temperature is reduced, respiration is labored and slow and the heart action is diminished, but these symptoms soon disappear again and the animal seems to have recovered from the poison, but in the course of 12 to 48 hours after the injection the animal gets very weak suddenly respiration and heart action is labored, and the animal succumbs. Author thinks this is the intermittent action of the drug.—*Wratsch.* 29, 103, 1882, *Russian.* T

Ergotin in Diseases of the Spleen.

The following is a brief extract of an article by Winogrado. He treated two cases of chronic malarial enlargement of the spleen by ergotin in doses of 0.03 grm. three times a day to 0.12 grm. four times a day. In one case the diminution in size of the spleen was rapid, so that the change could be distinctly noticed from day to day, in the other case the change was not so marked, but H. thinks that was caused by the disease having progressed too far, possibly there was amyloid degeneration or interstitial hypertrophy.

The literature of this subject is very deficient. One case is described by Dr. Dowodschikow that was treated with this remedy with admirable results. Ergotæ purificatus will undoubtedly act just as well, and it is to be hoped that the readers of this article will investigate the matter at the first opportunity.—*Tageblatt d. Gesellsch. Kasaner Aerzte*, 16 *Russ.* T

Ergota Secalis in the Treatment of Typhoid Fever.

After a thorough trial of a number of remedies in the treatment of typhoid fever, Dr. Dubove highly

recommends ergot as the most efficient remedy that we possess, even in the worst types of this malady. The object in the treatment of typhoid fever is to reduce the mortality rate. The use of ergot is perfectly harmless, but the great desideratum is in the use of an article that is reliable. Of this we should always assure ourselves prior to administering it to a typhoid patient. Author has not seen a single case in which ergot was contraindicated. He usually prescribes it in doses of 0.25 ctgm., given in bread or put in capsules; or the powder may be given in water, milk, wine, any syrup, but when mixed half and half with sugar, it retains its active principles longer. Ergot should be given from six to eight times during twenty-four hours, and always after some food or water has been taken.—*St. Petersburg Med. Woch.* T

The Action of Strychnia on Dilatation of the Heart.

A number of patients who suffered from dilatation of the heart, were treated with this remedy by "Maragliano," with good results. When the patient was examined the size of the heart was outlined by percussion, and marked for future comparison. The results were as follows:

1. After strychnia was administered internally for 1–2 days, the dilatation began to contract and in the course of 5–6 days, the change was quite marked when compared with the tracings of the first examination.

2. After using strychnia for a few days only, and then suspended its use, the little change that has taken place, soon disappears again in most of the cases.

3. In order to obtain permanent results, 2–3 mgrm. of sul. strychnia must be amdinistered three times daily for some time.—*Cbl. f. d. Med. Wissenschrift.* T

The Action of Ergota Secalis in Delirium Tremens.

While treating an individual for hemorrhage from the lungs who was an habitual drinker, the author noticed the good effects of ergotin (that was administered for the lung trouble) on the attacks of delirium tremens to which the patient was subject.

Accordingly the same plan of treatment was instituted in a number of individuals with the most gratifying results. After the use of 1 to 1½ grains of ergotin the delirium ceases in all ordinary cases. Author thinks the effect is brought about by the action of the ergotin on the vessels of the brain.—*Wratsch.* 37, 1882, *Russian.* T

Pyrogallic Acid in Chancre.

Vidal publishes the following as being his observation with the use of pyrogallic acid in chancre: In phagadenic chancre where the enlargment of the ulcer could not be prevented by the use of iodoform or the red hot iron, an application of pyrogallic acid in the form of an ointment, 1 to 4 parts, twice a day brought about prompt relief. The ulcers soon lose their virulency, normal granulations appear and the sore may then be treated as a simple wound. In cases where the edge of the ulcer is undermined, where there are sinuses, or in chancroidal buboes the author recommends the use of pyrogallic acid in starch, 1:4. So it may be used in the form of a powder.—*La Semam Med.*, 1, 1883. T

Koronico.

Koronico is the name of a tincture prepared from veronica perviflora, and especially used in Australia. It is given in diarrhœa, acute as well as chronic, and its action in the latter form of trouble is highly satisfactory, excellent results having been obtained. We would call the attention of the profession to this valuable remedy for further observation.—*Monatsschrift Deut.-Amer. Aerzte.* T

Treatment of Chronic Exudations in the Pelvis.

Pelvic exudations, which are mingled with pus, and have formed fistulous exits, are best treated by means of drainage tubes. These tubes are made of pure gold and are held in place by straps. In five cases in which abscess formation had not taken place, the author brought about a complete cure by means of prolonged and repeated inunctions of mercury.—Prochowrick, *Deut. Med. Wochenschrift*, No. 32, 1882. T

Injections of Arsenic in Goitre.

One part of liq. kal. arsen. to three parts water was employed in 100 cases. Of this solution ten to fifteen minims are injected parenchymatously 2 to 3 times a week. This preparation is preferable to the analogous injections of iodine: (1) The cures are as lasting; (2) reaction in the tumor is less; (3) subjective symptoms on the part of the patient are less.—E. Grunmach, *Berlin. Klin. Wochenschr.*, 1882, No. 32. T

Grindelia Robusta for Asthma.

Dr. Bombelon (Bergen on Rügen) recommends the smoking of cigarettes, the tobacco of which has been saturated with the resin of grindelia robusta, to asthma patients, whether they are smokers or not. The tobacco must also be well impregnated with salt petre, which will facilitate its combustion and the development of smoke. If the patient is unable to smoke himself, the fumes are blown toward him.—*Zeitschr. d. Allg. öster. Apotheker Vereins.* T

A New Use for Chloral Hydrate.

B. Bonatti recommends chloral hydrate in combination with senna as a rapid and safe drastic cathartic. He prescribes:

℞ Infus. sennæ, fl. ℥ x.
Chloralis hydratis, gr. xxiv to l.
Syrupi, fl. ℥ j.

With this he obtained an action where cotoin and jalap had failed.—*D. Med. Zeitung. Pharmaceutische Centralhalle*, No. 52, 1882. T

Correspondence.

On Case Reporting—A Reply.

Although sorely pressed for time just at present, I must find a sufficiency of it to briefly reply to a paper on "Case Reporting" by Dr. G. Herschell, of London, England, in the May issue of the THERAPEUTIC GAZETTE, page 190, in which he sees fit to single me out for vituperation. I flatter myself that those per-

sonally acquainted with me would accuse me of anything else than superficiality. To be just, Dr. H. ought to have taken my communication, "One Case of Diphtheria," in February number, page 51, et. seq., for what it was intended, and not for a pretended full treatise on diphtheria; but it ought to have been received, and no doubt has been by the great majority of the readers of the GAZETTE, in that spirit of benevolence, in which, for the benefit of physician and patient alike, it was written. In his contributions to medical periodicals the practitioner, writing for and to his confréres, desists from giving, or rather repeating the physiological action of well-known drugs pre-supposing their familiarity with such action, real or presumptive and hypothetical; for ambiguous dissertations could find space only in a paucity of monthly papers, and for a class of students in medicine the busy practitioner writes not, as a rule. Different it is with new drugs, and physiological reports thereon are always welcomed with high interest and delight by every medical editor and the profession at large.

Dr. Herschell also takes offense and picks at several of my expressions, like "bacterial accumulations." When it is remembered that the patient in question had not been feeling well for weeks and had neglected herself all the time, it cannot be astonishing that such accumulations actually did take place. While fully endorsing and believing in the researches of such authorities as cited by Dr. H., I should be highly pleased to learn of some original observations of his own. By "enormous bacterial discharges" I did not intend to convey the idea that they could be measured by the gallon, or even by the pint at any one time, but they evidenced too clearly the deep-seated viciousness of the disease.

Speaking of chlorate of potash in a finely powdered state acting also "mechanically as a corrodent," I meant exactly what I said, that it considerably assists in loosening those false membranes; and if the seat of localization had been sufficiently accessible, they might preferably and perhaps with more speed have been done away with by means of a file or a piece of sand paper. But, no joking! This is against the dignity of a medical correspondent, according to Dr. Herschell's, of London, code. He no doubt prefers to see in a physician an austere expression of countenance, face doubly elongated from "frons to mentum" from the importance of the occasion, and looking in grave solemnity down upon the patient, who in nine cases out of ten would prefer to look into a smiling, encouraging and benign face bending over him and take new hope and cheer therefrom. Pedantic views do not go very far in this country of ours.

To slightly correct Dr. H. in the enumeration of the divers ingredients of my potash mixture, I beg leave to state that vinous tincture of rhubarb contains also two carminatives, cardamon and orange peel, making in toto ten ingredients instead of eight, but none of them incompatible, and I earnestly recommend my treatment to Dr. H. for his very next case. In this connection I ask him to rest assured and easy that I am fully competent to correctly diagnosticate a case of highly malignant diphtheria complicated with pleurisy.

While I fully appreciate the high importance of the use of modern instruments of precision, the busy practitioner cannot conveniently carry a complete collection of them with him on his daily rounds; and happily those are days of the long past, when "*vir doctissimus et sapientissimus*" perambulated the streets with one or more attendants at his heels loaded down with his paraphernalia.

The well-timed invitation of the editors of the GAZETTE to the "Collective Investigation of Diphtheria" and the liberal responses thereto, manifest the great interest taken (beware ye, brethren, who brought more than one or two drugs together in one medicine!) and gives Dr. H. a rare and excellent chance to let his light shine on this dark continent of ours. So far we have received from him little more than a tirade of censure and vituperation.

Pity the poor people of England when, in the occurrence of a great diphtheritic epidemic with all its terrors, they shall have to be solely dependent on theoretical views, and be experimented on physiologically by one drug after another; mortality would then be the rule, convalescence only the exception!

H. STIEREN, M. D.

MASON, W. Va.

Collective Investigation of Disease.

I highly approve of the method you have adopted for the study of diphtheria, and think it would be productive of good results if extended to all other important diseases. In this way you may acquire a complete and extended history of the disease, embracing its widest diffusion, under the diverse conditions of social life, climate and sanitary surroundings.

If we would understand the essential nature of a disease, we must study its symptoms, pathology and clinical history in its diffusion, and not in its localization. Diseases are modified in their symptoms, and in the extent and degree of pathological lesions, by diatheses, climatic influences, social conditions, habits and modes of life. We would expect a wide difference in a disease as exhibited in the city and as seen in the open country. The city physician, drawing his conclusions from his field of observation, differs in his opinions with the practitioner in a healthy rural district. The disease presents different aspects in the two localities. A rational therapeutist would suggest a different course of treatment, since the profession has reached a point in therapeutics that is not wholly empirical. The best physicians are not influenced in their therapeutic measures by names and an ideal pathology, but by pathological conditions and symptoms actually existing.

W. N. TURNER, M. D.

DANVILLE, KY.

Patent Medicines in Italy.

The following clipping from the Grenada, Miss., Sentinel, forcibly indicates the conception which the editor has formed of the nostrums, the advertisements of which contribute so largely to the revenues of the press:

"Italy has passed a law, that no patent medicines can be sold in that kingdom, unless the proprietors shall first submit a complete prescription of the constituent parts of which they are made, with their relative proportions. Such a law in this country, would save for hog wallow, many thousand gallons of utilized, but valueless water, and dough enough manufactured into pills, to fatten five thousand head of hogs."

H.

PRESCOTT, Ark.

The Therapeutic Gazette

WILLIAM BRODIE, M. D., Editor.

ASSOCIATE EDITORS:

J. J. MULHERON, M. D. and A. B. LYONS, M. D.

DETROIT, MICH., July 16, 1883.

GEO. S. DAVIS, Medical Publisher, Box 470.

SUBSCRIPTION PRICE (Postage Included) $1 00.

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Collective Investigation of Diphtheria.

IT was our intention to publish in the present issue of the GAZETTE the balance of such replies as have been received to our schedule of queries touching on the more practical points on the subject of diphtheria. The accumulation has, however, rendered such publication impracticable within our limits, and we are obliged to give our summary of the whole and the deductions therefrom without laying before our readers more than the 24 pp. devoted to these replies in our two previous issues.*

We may be permitted to say that the interest in this method of the collective investigation of disease, as evinced in the replies to our questions, has been extremely gratifying to us as its introducers this side the Atlantic, and we venture the opinion that the result will prove much more beneficial to those who give the replies a careful study, than would the perusal of a treatise on the subject by any one author, and that, too, regardless alike of his ability and the time he might devote to the task. The replies have exceeded our most sanguine expectations, whether viewed in the light of their number or of their quality. They embrace the experience of representative practitioners in twenty-five states of the Union, and not a few of the names attached will be recognized as those of gentlemen of national reputation. We will be pardoned for indulging in a no inconsiderable degree of pride in this result.

A characteristic of the replies lies in their directness and absence of circumlocution. Herein they differ from such remarks as the same gentlemen would make at a society meeting—the most valuable means heretofore recognized for eliciting the views of practical men on practical subjects. At such meetings the untrained extempore speaker is wont to envelope valuable points in a profusion of irrelevant verbiage. In our collective investigation he has been removed from the embarrassments which interfere with the expression of his convictions and has given his views concisely. While dogmatic utterances are not to be encouraged, except in matters in which exact knowledge is attainable, one positive utterance on a point in therapeutics, based on the experience of a competent observer, outweighs in value a volume of theory and generalization. In the replies as received there are, it is true, what might be regarded as clashings of positive testimony, by the superficial reader. A deeper study will, however, discover suggestions which will, to a remarkable degree, make harmony out of the discord. Such clashings as appear in the replies are but intensified by the positiveness which is their characteristic, and which adds to their individual value. If we shall succeed in introducing a harmonizing thought, the beauty and worth of this positiveness will be all the more apparent. We shall, in connection with the following summary, endeavor at the proper places to introduce this element. It must, in view of the indifferent success which has attended the efforts of the exact scientist to explore the well-nigh impenetrable arcanum of this fell disease, be largely speculative. This fact will, however, detract from its value only to the extent in which it may clash with what is known.

1. What is your opinion in regard to the local or constitutional nature and treatment of diphtheria? and 2. On what clinical facts, observed by you, do you base your opinion?

The nature of the replies to the first of these queries has satisfied us that it is somewhat ambiguous. It was intended to elicit an expression on the questions: 1. Of the local or constitutional origin of the disease, and 2. On the comparative value of local and constitutional treatment. While a number of our correspondents have so interpreted it, some have not. Among the former we would state, without "polling the vote," that the house is quite equally divided, as regards those whose opinions are positive. There are some very decided expres- of opinion on either side, and it must strike the reader as peculiar that gentlemen of equal ability and prominence should place themselves thus diametrically opposite, on a question which must be decided purely on the results of observation. We are constrained to believe that these gentlemen themselves, when they see the direct opposition of their convictions to those of physicians to whose ability in all the requisites of the scientific practitioner they are prompt to defer, will enquire for some explanation which may harmonize their differences on this question. Those who regard the disease as primarily local adduce strong evidence to sustain this conception of it, and their opponents fortify their position with proofs none the less worthy of credence. What is more natural under such circumstances than to hold that both may be right? And we think the facts tend clearly to show (1) that diphtheria may, and prob-

* Our publisher, Mr. George S. Davis, will issue all the replies received, in book form, and will furnish the gentlemen whose communications have not appeared in the GAZETTE, with copies free of charge. The book will contain upwards of 400 pages, octavo size, and will be issued in paper cover and in cloth binding. The price will be: In paper, 75 cents; in cloth, $1.00. Subscribers to the THERAPEUTIC GAZETTE will be furnished with copies at 35 cents and 50 cents respectively. These latter prices are barely sufficient to cover the cost of publication and postage.

ably most frequently does, exist as a purely local affection; (2) that it may be first local and then constitutional; and (3) that the local affection may be secondary to grave constitutional infection. No physician, be he the sternest of advocates of the local origin of the disease, but will concede that constitutional disturbance may be violent before any local trouble is discernible; and on the other hand, the existence of a membrane without the slightest rise of temperature, acceleration of pulse on other symptom of constitutional disturbance is so frequent as to constitute a large percentage of the cases met with during severe endemics. The existence of the diphtheritic sore throat, or, as it has been called herpetic tonsillitis, and its close relation to the true membranous diphtheria, are facts which cannot be controverted. A nurse is the Michigan College Hospital, of this city, was attacked with herpetic tonsillitis last fall, before the endemic had developed sufficiently to create a suspicion in the case of an isolated attack of sore throat. Not the slightest perceivable trace of membrane presented. Before the intense redness of the membrane had subsided she visited her home, thirty miles distant, where there was no diphtheria neither had there been for over a year. In a week her sister was attacked with a typical case of diphtheria, and in another week her brother, a young man of twenty, contracted it. The latter case proved fatal. Last winter a lady fifty-two years of age contracted a sore throat while nursing a child five years of age, who died of diphtheria. This lady's throat, although intensely red and sore, presented not the slightest suspicion of a membrane or patch. In about a week the throat trouble had subsided, but in the third week, dating from the attack, paralysis of the constrictors supervened, and was relieved only after a month's treatment with strychnia and electricity.

Whether diphtheria is primarily a local disease, and subsequently a constitutional, or *vice versa*, or whether it remains purely a local disease, seems to depend on some anatomical peculiarity or some special susceptibility on the part of the one attacked. The child with the large spongy tonsils is most liable to have constitutional symptoms first, the virus apparently being thus afforded a ready entrance to the circulation. In the normal condition of the tonsil the virus is not so apt to effect an entrance, and its first action is on the mucous membrane of the throat, which it irritates and inflames, and places it in a condition which favors subsequent absorption with its causation of the constitutional disease. The nature of this poison we will consider later on.

3 and 4. What is your opinion as to the contagiousness of diphtheria? What facts in your experience bearing on this question?

The opinion of the profession, as manifested in the replies to these questions, greatly preponderates on the side of the contagiousness of diphtheria. There is, however, considerable conflict of opinion on this point also. Careful and candid observers are arrayed diametrically opposite each other on the question, and it is, therefore, but fair to presume that under different circumstances the disease may be contagious and non-contagious. In considering the contagiousness of a disease, account must be taken of the condition of the person exposed. The seed may fall by the wayside where it never takes root; it may fall on stony ground where its development is but partial; and it may fall into soil peculiarly adapted to its growth, where it takes root and brings forth an abundant fruition. We know that occasionally unvaccinated persons have been steadily exposed to the contagion of small-pox and yet have escaped unscathed; and again there are those whose susceptibility to the virus is so strong that successful vaccination and re-vaccination are not sufficient to prevent a more or less modified form of variola. May the case not be precisely similar in the matter of diphtheria? We think that while the evidence is quite conclusive that diphtheria is a contagious disease (using the term in its broadest signification, which embraces infection) it is not what might be termed very actively contagious; it is a seed which requires very favorable conditions to make it germinate. In the absence of these conditions it may fall in vain, as far as propagating its kind is concerned. What are the conditions favorable to its growth? One of our correspondents insists that the virus is never propagated in a healthy mucous membrane, and that the most effective prophylactic is the taking of effective precaution against the occurrence of catarrhal inflammation. While we shall claim, under another head, that inflammation of the buccal mucous lining, and particularly that of the posterior parts of the cavity is an effect of the diphtheria poison rather than a cause of the growth of the membrane, we cannot but admit that the previous condition of these parts has much to do with the question of the contagiousness of the disease in individual cases. As already intimated the anatomical and the anatomico-pathological configuration of the tonsils and adjacent parts has much influence on the question of predisposition in a given case, as it also has on the course of the disease. The child with the enlarged tonsils with patulous follicles, either through chronic hypertrophy or acute congestion, furnishes, we believe, an exceptional soil for the deposit and germination of the diphtheria poison. To anticipate the question of the prophylaxis of the disease, it is not unreasonable to suppose that the great value of the tincture of the chloride of iron and the potassic chlorate is traceable quite as directly to the local effect of this combination on the mucous membrane of the vestibules of the respiratory apparatus as to any constitutional effect it is supposed to have. Doubtless, too, the virulence of the poison is intensified by the conditions under which contagium of kindred nature is made more active, viz., filth, bad hygiene, defective ventilation, etc. The influence of age must also be considered in connection with the question of contagion. The susceptible period is between the ages of five and six and the occurrence of the disease after ten is exceptional.

5. What microscopic examination, if any, have you made of the diphtheritic membrane?

The replies to this question have been comparatively few, but they are exceedingly interesting. The detailed report of microscopical examination by Dr. J. H. Kidder, U. S. N., is a very valuable contribution to the literature of the vexed question of the existence of specific micrococci in diphtheria. Drs. J. N. Salisbury and Ephraim Cutter* also give a description of the *mucor malignans* which they hold

*The contributions of these gentlemen will appear in the published collection of replies.

to be the specific etiological factor in the disease. With a few exceptions the other contributors have made no microscopical examinations, and, practically, we have before us only the reports of the three observers named. These reports differ very diametrically and we are at a loss in this instance to introduce any harmonizing element. Dr. Kidder's examination of the membrane revealed micrococci which differed in no sensible characteristic from those which may be found in healthy saliva, while Drs. Salisbury and Cutter report the presence of the *mucor malignans*, which they hold to be characteristic, and the specific cause of diphtheria and scariatina. In this opinion these latter gentlemen, as far as our knowledge goes, stand alone among the microscopists of the day. Dr. Kidder's observations are, we think, in very full harmony with the preponderating opinion on the subject, and confirm the growing conviction that the micrococci which have been discovered in the membrane are not peculiar, and that the only causative relation which they bear to the disease is that of carriers of the virus, the latter being an entity which has thus far escaped the power of the lens to make it visible. The claims which have latterly been made that constitutional diphtheria is "bacteræmia," or the charging of the blood with bacteria or *micrococci diphtheritici* is unsupported by any sufficient microscopical revelation. The suggestion of Dr. Kidder that the colorless granules which he detected are due to the breaking up of the leucocytes under the influence of the diphtheritic poison, points, in our opinion, to a more intelligent pathology of this disease than has yet obtained.

The evidence is quite conclusive that when micrococci are found in diphtheritic blood they have entered it after it has been withdrawn from the circulation. Wood & Formad in their experiments carefully examined the blood of the rabbits on which they experimented, and found no micrococci. They drew the blood directly from the jugular veins and examined it at once, but when after the lapse of a few minutes the post mortem was concluded and the heart opened, the blood therein was found to contain an abundance of these low organisms.

The conclusion from this investigation of diphtheria is that it is impossible to make a diagnosis of diphtheria by any microscopic examination of the membrane. There is nothing in the nature or structure of this membrane which affords any grounds for believing that it differs from the exudate which may be produced by the application of cantharides, ammonia, or other chemical irritants. The inference from this fact, and from facts of clinical observation, is that the diphtheritic virus is of a gaseous and intensely irritant nature, producing, by contact with the throat, an intense local inflammation, and capable, under a favorable condition of the parts, of direct entrance into the circulation, where it operates to the disintegration of the blood.

6. What measures, if any, have you adopted by way of prophylaxis, and what success has attended those efforts?

Prophylactic treatment of a medicinal nature does not seem to have been very generally employed. Isolation is with very few exceptions deemed essential, and that, too, singular as it may seem, by those who assert the non-contagiousness of the disease. The necessity of the diluting influence of fresh air and the destructive effect of oxygen on the materies morbi, are recognized in the universal insistence on ventilation as a means of prophylaxis. The value of a proper hygiene is also recognized, while a few of our correspondents insist on what we should regard as a precaution of paramount importance, viz., careful attention to the mucous membrane of the throats of the well during the prevalence of the disease. Chronic sore throat, pharyngitis or tonsillitis, and large flabby tonsils are standing invitations to the disease.

As medicinal means of prophylaxis, the tincture of the chloride of iron, chlorate of potassium and quinine, are spoken of as of unequivocal value. Their *modus operandi* is not hinted at, but besides the tonic influence on the blood of the iron and the quinine, thus increasing the power of the system to protect itself against the virus, together with the well-known influence of the potassium salt on mucous membranes, they are probably largely beneficial through their local action on the parts over which they pass on their way to the stomach. Whether the thorough local application of the combination would successfully take the place of their internal exhibition, there are no facts to determine.

7. What local treatment have you found most efficacious?

It follows, quite necessarily, from the views suggested by the opinions on the question of the local or constitutional origin of diphtheria, that the direct value of local treatment, as regards diphtheria proper, must be largely dependent on the circumstance of the entrance or non-entrance of the specific cause into the circulation. In cases in which it has been intercepted in its way to the blood and has set up its local inflammation, early attention to the local disturbance is manifestly of prime importance. Should the poison, however, have directly entered the round of the circulation, the value of local treatment must be subordinate to the constitutional. But in either case the local trouble may be the source of grave complications through the unabsorbed virus or the septic matter which may be taken up from it. In any case, therefore, local treatment of the diphtheritic exudate is so important as scarcely ever to warrant its neglect.

The list of remedies recommended as local applications is a very long one, and our space forbids even their enumeration. But although the number is large, it does not embrace any great diversity when the physiological action of the drugs is considered. A division into three classes would leave but very few of them unclassified. These three classes would be antiseptics, disinfectants and astringents. It is important in this connection to recall the distinction, which seems to have been more or less lost sight of, between antiseptics and disinfectants. By an antiseptic is properly meant an agent which simply prevents putridity, and has nothing to do with destroying the products of putrefaction. A disinfectant, on the other hand, while it may also arrest putrefaction, is chiefly valuable because of its power of destroying the morbific effluvia from decomposing matter. It is well known that certain agents, as carbolic acid, for instance, are improperly employed as disinfectants, their effect being rather to conceal the odor of noisome exhalations than to neutralize them.

From such knowledge as we possess, the diphtheria poison is a gas, or a combination of gases, generated by the decomposition of organic matter. The relation of effect and cause between it and sewer gas has often been urged. Sewer gas consists of sulphuretted hydrogen, sulphide of ammonium, carburetted hydrogen, oxygen, nitrogen, carbonic acid gas and organic matter. Of these ingredients sulphuretted hydrogen and sulphide of ammonium are extremely poisonous. Experiments on rabbits have shown them to have a very destructive influence on the hæmoglobin of the red blood corpuscles. The agent which shall successfully neutralize this gas must be a true disinfectant and not a mere antiseptic. In the remedies as recommended, the decided preference is given to agents of the former class, experience rather than *a priori* reasoning, doubtless, having determined this preference.

Another object of the topical treatment of diphtheria, is to allay the local inflammation and to diminish the absorptive power of the surface with which the virus lies in contact. To accomplish this, the application of an astringent would be very naturally suggested, and in the experience of our correspondents, the value of astringents has been vouched for.

If we were to select an agent which should combine in itself the essentials of treatment, according to the theory we have advanced, viz., disinfectant and astringent principles, we should find few if any which would answer our purpose better than the tincture of the chloride of iron, the very agent the testimony in favor of which so preponderates in the replies to our question covering the local treatment of diphtheria. The tincture of the chloride of iron is also antiseptic, limiting the growth of bioplasm, according to Beale, and thus checking necrobiosis. Its disinfectant power has been demonstrated by an experiment in which half a gallon sufficed to disinfect 6,600 gallons of polluted water. It required 3 pounds, avoirdupois, of chloride of lime and 36⅓ pounds of lime to produce the same effect.

Our space prevents us from discussing *seriatim* the individual local agents, recommended. Let it suffice to recapitulate:

Local treatment demands a combination of disinfectant and astringent principles. The tincture of the chloride of iron combines these very successfully, and other agents or combinations of agents must compare with it in efficacy in proportion to their success in combining these principles. As yet no agent has been suggested which more satisfactorily effects this combination. When it has been discovered it will take the place of the tincture of the chloride of iron.

8. What general treatment has been most successful in your hands?

From amid the confusion of the recommendations of different ingredients, in reply to this question, there comes up in pronounced tone a demand for a combination of blood tonics, cardiac stimulants and eliminants, while in a tone less accentuated, but still distinct, the necessity for diminishing the fibrinity of the blood is urged. Of the numerous means to these ends, the tincture of the chloride of iron, alcohol and calomel stand chief. The testimony in favor of these three drugs is confirmatory of views of the pathology of the disease which have been suggested.

Iron. The effect of the *materies morbi* is unquestionably to deprave and disorganize the blood—to cause leucocythæmia. We know of no remedy in this condition, regardless of the cause, equal to the muriate tincture of iron. It is well known that iron not only augments the quantity of red coloring matter in the red corpuscles, but actually increases their number. While this effect is not noticeable on normal blood, it is very marked in the condition which obtains in anæmia or leucocythæmia. In proportion to the richness of the blood in hæmoglubin is its power to carry oxygen, and it is further claimed that the ferrous salts have the power of converting oxygen into ozone. It was, probably, because of the belief which formerly obtained, that the chlorate of potassa parted with its oxygen in the blood that this salt was formerly given in such large doses in combination with muriate tincture of iron. The explosion of this view of its action, associated with its undoubted ill effects on the kidneys, has caused it to be much less freely used than formerly. The fact that much larger doses of the tincture of the chloride of iron than can be absorbed are found necessary in diphtheria, as is also the case in erysipelas, would seem to argue the added influence of the acid in the combination. Small doses of this preparation at long intervals are useless. Another effect of this preparation is noticeable on the nervous system. Referring to its action on the system in diphtheria, Dr. Jacobi, in his excellent Treatise on Diphtheria, says: "It has been found that of all the preparations of iron, the chloride possesses the power of stimulating the nervous system. Possibly this effect may be traced to an increase of the arterial pressure in the nerve-centres. It has been said that this effect has been vividly illustrated in certain forms of chlorosis. If this be true, iron would be all the more indicated in diphtheria, since it would act as a prophylactic against a series of nervous phenomena that so frequently present themselves, both during and subsequently to, the diphtheritic process."

Alcohol. The value of alcohol in diphtheria seems to be one the most firmly established points in its treatment. The only limit to the amount necessary seems to be the capacity of the patient to take it short of its intoxicating effect, and the quantities which are reported as having been given to children without producing this effect, are well nigh incredible. We shall not attempt to discuss the *modus operandi* of alcohol in such doses, further than to hint at its influence in reducing body heat, and its effect in retarding tissue metamorphosis. It is quite possible that its beneficial action in this disease is as directly due to these latter effects as to the stimulating properties.

Calomel. The testimony to the value of this drug in diphtheria, though coming from comparatively few witnesses comes with such force and directness as compels attention. Its *modus operandi* being scarcely hinted at, we are left to conjecture the action through which it works the remarkable results claimed. These reports following so closely on the claims for specific properties of the drug by Dr. Reiter, and reproduced in the GAZETTE for November, 1882, will have the effect of directing renewed attention to it. Dr. Reiter attributed the disease to an excessively fibrinous condition of the blood, due to suspension of the fibrine-destroying function of

liver, which function he sought to restore by the exhibition of enormous doses of calomel, twenty grains as a commencing dose, to be followed every hour, in a child eight years of age, by ten grains until half an ounce has been taken. He declares that neither excessive catharsis nor emesis follows this use of the drug. We shall not stop to argue the question of the action of calomel on the liver. It is, however, a recognized effect of mercury to decrease the fibrinity of the blood and to diminish its coagulability. It must, moreover, in the doses given act as a decided depurant. It must, however, require considerable fortitude on the part of the practitioner to continue the large doses recommended by Dr. Reiter, and we are pleased to note that the practice of our correspondents is to discontinue these large and frequent doses as soon as the stools have assumed the greenish color characteristic of free catharsis by calomel. It would seem to us that its use should also be confined to sthenic or more dangerous cases, and that its indiscriminate employment, especially in asthenic types of the disease, must be bad practice.

Carbolic acid. This is the only other agent recommended which we shall take the space to refer to. It enters into the formulæ of a few of our correspondents for local application. According to theory of the nature of diphtheria as deduced from the replies received, it is a useless application, and in the light and knowledge of the dangers of carbolic acid poisoning through absorption from the mucous membrane, it is worse than useless; it is positively harmful. It is antiseptic, checking putrefaction, and suspending the amœboid movements of the white blood corpuscles, but it is not a disinfectant, and therefore has no effect on the gaseous principle which we have assumed to be the virus of diphtheria. In the light of Dr. Cutter's experiment, in which after immersion of a piece of diphtheritic membrane for three years in a much stronger solution than it would be judicious to apply to the living membrane, the bacteria were still found active, carbolic acid must appear to those also who hold to the micrococcus diphtheriticus, to be lacking of value.

SUMMARY.

We have endeavored in the foregoing to give an analysis of the views of our correspondents, with the comments which they have suggested, but have been obliged, through limitation of space, to pass over a number of interesting points.* To briefly summarize our conclusions we would state:

1. Diphtheria may be either local or constitutional in its origin.

2. It may continue as a purely local or as a purely constitutional disease, or the local disease may be followed by constitutional infection, or *vice versa*—the disease in the vast majority of instances manifesting itself in both the constitutional disturbance and the local affection.

3. The comparative value of local and constitutional remedies is dependent upon the nature of the affection in individual cases.

4. Diphtheria is a contagious disease, but not liable to attack a healthy mucous membrane or to find an entrance through it into the circulation.

5. The contagium of diphtheria is not a micrococcus, nor is it visible under the most powerful microscope yet manufactured.

6. The contagium of diphtheria is of a gaseous nature (the result of decomposing fæcal and other organic matter), and can be neutralized only by a true disinfectant and not by an antiseptic.

7. The best local application is the tincture of the chloride of iron. It may be supplemented by other applications according to the indications in individual cases.

8. In a typical case of asthenic diphtheria, administer large (10 grains) and frequently repeated (hourly) doses of calomel until the characteristic stools are secured. Following this give large doses of the tincture of the chloride of iron every two hours, and administer alcohol within the limits of intoxication. In asthenic cases the calomel should be omitted and the main reliance placed on the iron and alcohol.

J. J. M.

*We shall touch on these and enlarge on those already touched on, in the volume in which the full replies are to appear.

The Pharmacy of Grindelia Robusta.

AMONG the drugs which the revisers of the U. S. Pharmacopœia have deemed worthy to be added to the list of the officinal materia medica, we are pleased to see a few of our indigenous plants—only four or five, indeed, out of a score whose merits are recognized by physicians throughout the land—and among them is one of the species of Grindelia.

Not only is the article mentioned and described, but a formula is given for a fluid extract of the drug. We have no quarrel with the revisers of the pharmacopœia on account of their conservative disposition. The peculiar nature of their work renders them of necessity conservative. Their task is to gather up the results of completed experiment—not to introduce innovations of any sort, however promising they may appear. The most serious mistakes that have been made in the past by those intrusted with this responsible work, have consisted in an occasional yielding to the temptation to make changes—possibly very much needed changes—prematurely; even the late revision has been criticised somewhat severely, in certain particulars, on this very ground.

It seems, indeed, as though the value of some of the so-called new remedies is so universally recognized, that they should at least be enumerated and described, albeit the range of their use is not yet established with scientific precision. There seems to us no justice in mentioning the foreign Rhamnus frangula, and omitting our native Rhamnus Purshiana, when the latter is at least as widely used and as favorably known to the profession of our country as the former.

It would have been a much more serious error, however, to have introduced into the pharmacopœia a list of galenical preparations of some drug as yet new to pharmacy, whose formulas at the end of the year would require complete reconstruction, in the light of practical knowledge only to be gained by experience.

In the case of grindelia robusta, only a single preparation has been offered, and that a fluid extract. As a guide to those who might wish to make for themselves a preparation of the drug, such a formula would be useful. That it should be, any further than that, authoritative, could not, in the nature of the case be expected. The manufacturer allows himself, in this class of preparations, a greater

liberty in deviating from the formulas of the pharmacopœia than would be admissible in any others, and that for reasons that are good and obvious. One requirement only the manufacturer is bound strictly to regard, namely, that ounce for ounce his preparation must represent as nearly as possible the therapeutic properties of the drug itself. If, in his judgment, that end is not reached by the process of the pharmacopœia, he is in duty bound to seek out and use a better one. He knows that physicians will prescribe fluid extracts expecting to obtain from them the effects peculiar to the respective drugs, and in doses which they will reckon as minim for grain. His responsibility is, therefore, directly to the physician, and to those for whom the physician prescribes.

It may sometimes happen that the pharmaceutical chemist, reasoning from analogies, or starting perhaps from some false hypothesis, arrives at a different conclsion from that of the physician whose sole guide is clinical experience. A few months ago an article appeared in one of our contemporary journals, in which the assertion was made that a fluid extract of grindelia robusta ought to have certain physical properties in order to be of any therapeutical value. The active principle of grindelia, it was confidently asserted was a resinous substance, requiring for solution a strongly alcoholic menstruum.

A fluid extract containing this resin must necessarily afford a heavy precipitate if poured into water. Some of the fluid extracts in the market had been observed not to have this property. They could be readily mixed with syrups and aqueous solutions without forming any resinous precipitate, a proof that they did not contain the active principle (resin) of the drug.

Whatever may have been the motive of the writer, he has so managed that his views in regard to this drug have been accepted very widely as the last utterances of scientific pharmacy. We are prepared however to take issue with him on at least one of the propositions that underlie his conclusions, and are especially moved to do so at this time because the formula adopted by the U. S. Pharmacopœia for fluid extract grindelia seems to be based on similar views. The menstruum adopted for exhausting the drug is a mixture of three parts, by weight, of alcohol with one of water, and the resulting preparation will be rich in resinous matter which it will precipitate on the addition of water. This is an inconvenience to the prescriber who often wishes to exhibit the drug in a less strongly alcoholic vehicle, or in combination with syrups and other aqueous solutions. Is it true that strong spirit is the only suitable, or even the most suitable menstruum for exhausting the drug? That it has been very generally employed is unquestionably true; the presence in the plant of a large amount of resinous matter would lead a pharmacist naturally to select a strongly alcoholic menstruum.

But those who have had the largest experience with this drug as a therapeutic agent have employed it in the form of a fluid readily miscible with water, and their conclusions are not to be lightly set aside.

The drug was brought to the notice of the profession largely through the writing of Dr. W. P. Gibbons, of Alameda, Cal. In his first paper on the subject, read before the medical society of the State of California, the doctor says: "As yet it is undetermined whether the active principle of the drug is contained in the resin or in the juice of the plant, or in both. For this reason the infusion is preferable to other preparations of the drug for administration."—(Transactions of the Medical Society of the State of California, 1871-2.)

Two years later Dr. Gibbons stated that the physicians of California had very generally been disappointed in the results they had obtained from the use of the grindelia. His own experience had been so different that he took some pains to study into the probable reasons for this disappointment, and he concluded that it was, in part, owing to the fact that the plant had been gathered often in an immature condition, or when it had grown under unfavorable conditions on hilly land, but partly to the circumstance that the drug had been employed solely in the form of an alcoholic fluid extract. He had himself found the remedy efficacious in a large number of cases, but he had employed it uniformly in the form of an infusion or aqueous fluid extract. "The extract is prepared," he says, "by exhausting the officinal portion of the plant of its resin and other soluble ingredients, by digesting in water containing about one ounce of borate of soda to three pints of liquid, and subjecting it to pressure; repeating the operation, straining the liquid through flannel, and evaporating to the proper consistence. To make the infusion, four ounces of the heads and terminal leaves are put in two pints of water in which has been dissolved two drachms of borate of soda." (Transactions of the Medical Society of the State of California, 1873-74.)

Here we have positive clinical testimony to the efficacy and the superiority of a preparation of grindelia which will not precipitate when mixed with water. We submit that this is of greater weight than the *a priori* reasoning of a mere pharmacist, and then in such a case as this even the authority of the U. S. Pharmacopœia is to be disregarded, since it is in opposition to the clinical experience of those for whose sole benefit the pharmacopœia exists. Medicine owes much to the science and art of pharmacy, and is by no means disposed to repudiate the debt, but the obligations of the two professions are mutual, and neither may go outside of its proper sphere to dictate to the other. The last appeal in every instance must be to clinical experience, and in the effort rightly to comprehend and fully to profit by its teachings, physician and pharmacist alike, are bound to exhaust the resources of science and of their respective arts.

The American Medical Association and Nostrums.

THE agitation preceding the St. Paul meeting of the American Medical Association, excited by the introduction of the famous "Richmond resolution," which called for a more definite enunciation by the code of the ethical bearings of proprietary medicines, and the disposition of the resolution, will, doubtless, be readily recalled. The well-known conservatism of the judicial council, to whom all such questions are, under a fixed rule, referred, without debate, for final action, deeming the provisions of the code amply condemnatory of the class of drugs which the resolution embraced, considered it best not to disturb the venerable instrument by amendment. The introducers of the Richmond resolution quite agreed with the judicial council as to the explicitness of the code on the question referred to,

and their object being rather to call attention to the abuses and violations thereof by gentlemen of eminence in the profession and in the Association, than to secure any change in the code, were quite satisfied with the language of the report in which the council refused to introduce the amendment.

The agitation above referred and the language of the council have had a very salutary effect, and the most superficial observer cannot fail to have noted the diminution in the number of prominent names in the advertisements and circulars of nostrums during the past year. So decided has the change been that already the names which now appear are of those whom the connection advertises, rather than of those whose endorsement advertises the medicine. There are a class who pant for notoriety at any price; it is, of course, useless to hope that these will hold their desire in abeyance to any rules the penalty for the violation of which is not sure of being enforced.

The provisions of the code of ethics touching nostrums had practically become a dead letter when this journal commenced the series of articles, some three years ago, in which it reminded the profession of their violation by reputable physicians, in the case of copyrighted trade-marked compounds. The plausible representations of the manufacturers of these, deceived the profession into the belief that the codical restrictions had reference merely to those more glaring patent medicines which are advertised in newspapers and almanacs, and the posters detailing the wonderful properties of which are plastered on fences and deadwalls and every unforbidden spot which meets the eye of the public. The agitation of this question, dating from our opening of it, has resulted in such diffusion of a proper conception of it, that no physician of ordinary intelligence, in the ranks of regular medicine, now prescribes, or endorses by his certificate, any preparation protected by a copyrighted trade-mark, without a consciousness that he has violated a code to the observance of which he has, either expressly or tacitly, pledged his honor as a physician and a gentleman. The number of endorsers and prescribers of such preparations, as we have already intimated, has grown very beautifully less under this enlightened conception of the code.

If, perchance, aught were lacking to convince any pliant physician that the representative of the manufacturers of the trade-marked, copyrighted preparations who maintains that the code does not apply to his wares, is (either ignorantly or perversely) doing violence to the truth, we have it in the declaration of the late Cleveland meeting of the Association. At this meeting it was decided to establish a weekly medical journal by the Association, under the name Journal of the American Medical Association, the first number of which will appear during the current month. A plank in the platform on which the journal goes out to the profession declares that "all advertisements of proprietary, trade-mark, or patent medicine shall be excluded from the sheet, and that no advertisement shall be accepted which bears the names of endorsers having title appended, believing it to be contrary to the letter and to the spirit of the code of ethics."

In this repudiation from the pages of the Association journal, we find that explicit declaration on this question by the highest professional authority in this country, for which we have earnestly labored during the past three years. It is a signal triumph. In our efforts to this end we were made the victims of no little contumely and abuse by the nostrum ring and its organs. We counted on this when we set out in the campaign, but we did not count on the indifference of the profession during the first two years. It was a difficult matter to interest physicians in what the trade-mark organs adroitly represented as a "manufacturers' quarrel." When, however, it appeared that our attack on nostrums was from a purely professional point, and very directly in the interests of physicians whose incomes had been depleted to a greater extent than they knew, as well as in the interests of the public, the specious representations of the proprietary medicine manufacturers ceased to influence their judgment, and the sentiment of the profession has finally become crystallized in the action of the Association referred to.

The American Medical Association.

THE meeting of the American Medical Association, the thirty-fourth since its organization, at Cleveland, Ohio, commencing on the morning of the 5th ult., was, with one exception, the most numerously attended in the history of the Association, over twelve hundred delegates being in attendance. Gratifying as this large attendance was, it was larger than had been anticipated, and, as a consequence, the accommodations, hotel and otherwise, were not such as are very necessary to constitute a successful meeting in the sense in which this annual gathering is voted a success. While the American Medical Association is a scientific body it is something more, and a cultivation of its scientific side exclusively, or its cultivation to the neglect of the personal comfort and convenience of delegates, must detract from the full measure of its success. An attempt has been made to censure the Committee of Arrangements for the imperfect accommodations and consequent discomfort of delegates. This, we think, is unjust. Had the attendance been no larger than that of the preceding two years (and there was nothing to indicate that it was to be larger) the accommodations would have been ample. As it was, the fault lay rather with the limited hotel capacity of the city than with the committee. That an influx of twelve hundred gentlemen should have exceeded the reserve hotel-accommodations of a city of 150,000, was recognized as a deplorable circumstance by the public-spirited citizens, who were profuse in their apologies for the fact.

The cause of the large attendance is probably traceable more directly to an anticipated disturbance on the subject of the Code of Ethics than to any other one circumstance. Those, however, who attended expecting a discussion of the subject were disappointed, agreeable so or otherwise, of course, according to their predilections. A communication from the St. Louis Medical Society asking for an opening of the subject was laid over, under the rules, for a year. While there were present many sympathizers with the New York movement, the sentiment vastly preponderated in favor of the continuance of the Code as it has stood from the beginning.

The Association decided to journalize its proceedings and to issue a weekly journal to be known as the Journal of the American Medical Association. Over two thousand subscriptions have been pledged,

and it is expected that the number will reach 2,500. The price will be $5.00 a year. It is estimated that $5,000 will be realized from advertisements. The revenue will thus be $17,500, against which are the cost of publishing, $8,000, and that of editing, $6,000, thus leaving a profit, estimated, of $3,500. This is certainly a favorable showing, but it will take a year to determine to a certainty the correctness of the figures. Dr. N. S. Davis, of Chicago, was chosen editor-in-chief, with the power to select his associates. The first issue is expected this month. With this favorable start and under such editorial management the profession will be on the *qui vive* for a journal which will be in every way worthy and representative of the profession of this country.

Dr. Austin Flint was elected president for the ensuing year. In this selection of Dr. Flint, the Association not only did itself credit, but also bestowed its highest honor on one than whom there is none who is more worthy the distinction in its membership. Full of years, an able practitioner, a renowned teacher, an author of world-wide celebrity, and an educated, courteous and dignified gentleman, there is no American physician better qualified to maintain the respect of the Association at home or to give it standing abroad.

The scientific work of the Association as conducted in the various restion it is not strictly within the province of the GAZETTE to discuss. Suffice it to say that it was fully up to the average of merit, and in some instances this standard was excelled.

The social features of the meeting were exceedingenjoyable, when the large number in attendance is considered. The citizens and resident physicians exerted themselves, with success, to make the visit of the delegates to the Forest City an occasion long to be remembered.

Michigan State Medical Society.

THE eighteenth annual meeting was held in Kalamazoo, May 9th and 10th. Geo. W. Topping, M. D., of De Witt, President, in the chair. After prayer by the Rev. Geo. F. Hunting, the address of welcome was given by the Hon. E.W. DeVoe, which was responded to by the President. The usual reports of the officers were then made. Those of the secretary and treasurer showed the society in a sound financial condition.

Papers were read by Dr. Brodie, of Detroit, on "Aneurism of the Scalp by Anastomosis;" "Errors of Refraction and their Relations to Constitutional Symptoms," by Dr. C. J. Lundy, of Detroit; "Timely Catharsis," by Dr. T. N. Reynolds, of Detroit, and a paper on Diphtheria, by H. B. Baker, M. D., Secretary State Board of Health. Other papers were read by title and referred to the committee on publication.

The address of the President was an able and interesting paper in which he confined himself chiefly to State matters. He called particular attention to the medical department of the University, which he (although an Alumnus) claimed did not come to the standard of higher medical education as it ought, and which the profession of the State demanded. He took strong grounds against State education in the professions and especially in medicine.

To the latter part of the address exceptions were taken by the University doctors, when it was referred to a committee, who reported that the points in the address referring to the medical department were well taken.

A large number of new members were elected.

Dr. A. F. Whelan, of Hillsdale, was elected President.

First Vice-President—Dr. H. Tupper, of Bay City.

Second Vice-President—Dr. I. S. Hamilton, of Tecumseh.

Third Vice-President—Dr. H. B. Barnes, of Ionia.

Fourth Vice-President—Dr. A. Kaiser, of Detroit.

Secretary and Treasurer hold over.

Judicial Council—Drs. Pratt, Shank and Duffield.

A paper by Dr. H. O. Walker, on "Plaster-of-Paris as a Surgical Dressing," and a "Poetical Effusion" by Dr. Ward, of Laingsburg, closed the exercises, when the Society adjourned to meet at Grand Rapids, in June, 1884.

The meeting was a very full and interesting one, especially in matters of medical politics, which latter were settled for the best interest of the society.

Pure Iron-Dyed Surgical Silk.

FOR a number of years past Professor W. H. Pancoast, of Philadelphia, has been in the habit of employing pure iron-dyed silk for sutures, and the success that he has met with in its use is a proof of its great value. We take pleasure in calling the attention of our readers to an article by this celebrated surgeon in the issue of the Medical Bulletin for July, in answer to the numerous inquiries received by him from various sources. The well-known strength of silk, its delicate structure, non-inflammatory character, and the fact that it is an animal substance, all furnish strong arguments in favor of its universal employment in surgery. The advantage of the iron dye is that it does away with the irritating lead employed to bleach white silk, and, the black color renders it easy to distinguish, no matter how fine the suture employed. Prof. Pancoast's description of the operations in which he finds the black silk suture peculiarly applicable, is very interesting. His operation for varicocele, in which he employs this silk, possesses many advantages over that of Dr. Arthur E. Baker, of London, which has excited attention in surgical circles of late. Baker makes an incision, separates the veins of the cord from the vas deferens, then passes a needle threaded with twisted silk behind the veins, after which the veins are permitted to drop back into the wound. The needle is then returned in front of the veins, which are then secured in the loop of the ligature through the original opening. Prof. Pancoast's operation is much simpler in that no incision is necessary, and that the strong silk ligature crushes the veins against the metallic button. The crushing of the veins against a solid resistless substance is unique, and those who have followed this excellent plan can certify as to its efficacy, and the advantage of the strong silk ligature in obtaining the full results of the operation. At the end of three days a lump of plasma usually forms and the suture is removed.

A Bouchon.

DR. LINNÆUS B. ANDERSON, whose interesting article on Inflammation appears in our present issue, has written to have the orthography

of the word "buchan" as it appears in his article, changed to "bouchon." The request was received after the form containing the article had been printed, and we, therefore, call attention to the matter at this place. "Bouchon" means an obstruction, or dam, in the course of a stream.

The Dose of Convallaria Majalis.

IN the advertisement of convallaria majalis which appears in our present issue some of the numbers contain a misstatement of the dose of the drug. The form containing the advertisement had been partially run off before the error was detected. The dose is from 5 to 20 minims of the fluid extract, instead of "10 drops to a fluidrachm" as printed.

Book Reviews and Notices.

The Practitioner's Ready Reference Book. A Handy Guide in Office and Bed-Side Practice. By Richard J. Dunglison, A. M., M. D., Author of "A New School Physiology;" Editor of Dunglison's "Medical Dictionary and History of Medicine;" Secretary of the American Academy of Medicine, etc. Third Edition, thoroughly revised and enlarged. 1883.

Philadelphia: P. Blakiston, Son & Co.
Detroit: John MacFarlane.

The first edition of this work appeared in 1877, the second in 1880 and the third is on our table.

When the second edition was received, after a careful examination, we were favorably impressed with its value and usefulness, and so expressed ourselves in these columns.

That a third edition should so soon be required is satisfactory evidence that we were not mistaken in the opinion then given.

In the present volume numerous alterations and additions have been made. New subjects have been introduced for the first time and others so thoroughly revised as to become almost new. The table of doses has been made to conform to the new Pharmacopœia of 1880. Nutrition, enemata, new and carefully selected prescriptions, how to prevent the spread of small-pox, tables of differential diagnosis, how to apply bandages, how to apply immediate relief in recent accidents or sudden illness, arrest of hemorrhage, treatment of wounds, immediate treatment of fractures, of foreign bodies in the eye or ear, burns, scalds, and bites of rabid and other animals, of frost-bites, sprains, spitting of blood, insensibility, suffocation and sun-stroke. Suggestions for the nursing of the sick, how to make poultices, apply blisters, fomentations and leeches, etc., vapor baths, how to lift helpless patients and how to change their bed-linen, how to remove the sick or injured by beams or stretchers, the collection of data at autopsies and how to preserve the record; also instructions for making measurements of the same. It contains the Hippocratic Oath and rules of medical etiquette. In fact, within its 522 pages can be found much information essential to the practitioner that does not appear in general works of either medicine or surgery. It is a ready reference book to which is added a full and elaborate index. It is a book for the busy practitioner, who has often to hurriedly refresh his memory on matters of practical importance, and who has not time to refer to the more elaborate tomes of his library. We cordially commend it to our readers and advise every one to purchase a copy.

Gout in Its Protean Aspects. By J. Milner Fothergill, M. D., Member of the Royal College of Physicians of London; Physician to the City of London Hospital for Diseases of the Chest (Victoria Park); Hon. M. D. Rush College, Chicago, Ill.; Associate Fellow of the College of Physicians of Philadelphia. "The fathers have eaten gout grapes and the childrens' teeth are set on edge." 1883.

Detroit, Michigan: George S. Davis.

The subject of this book is gout. This is a disease that has had a slow introduction to the people of this continent, and we are happy to say is confined chiefly to those in affluence. Nevertheless, there are those who, although they have not personally acquired it, yet have inherited it; and, whether acquired or inherited, they are anxious to be relieved and even cured of the sufferings it produces.

The object of this book is to inform the doctor of the condition of the blood and urine in gout, the pathological changes wrought by the gout poison externally and internally, how to diagnose the disease and prognose its results, to investigate its causes and how to treat it. To distinguish between acute and chronic gout, between rheumatic gout and chronic rheumatism, with some general considerations on indigestion, biliousness, diabetes and gout.

If there is any one disease that is a legacy of royalty it is gout. It is a disease of wealth ignoring poverty, and it is among those who live high that it is to be found. In cities it has its habitation, but occasionally it is found in country homes. For a long time it monopolized the eastern hemisphere, but now it is extending itself into the western.

This work of our author is a timely one, and if well read and well studied, will enable the American practitioner to meet its assaults and ward off the evils which it describes.

To be "forewarned is to be forearmed," and we must thank both author and publisher for the timely introduction of this book to the American people. It is a small octavo of over 300 pages, is handsomely printed and bound, with a full index. There is much in it of value to the layman in reference to how to prevent gout. To the physician it gives lucid instructions in how to mitigate the sufferings it causes, and how to cure it. We therefore recommend it to the profession as the latest work on the subject and as one that is reliable.

The International Encyclopædia of Surgery. A Systematic Treatise on the Theory and Practice of Surgery. By Authors of various nations. Edited by John Ashhurst, Jr., M. D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with chromo-lithographs and wood-cuts, in six volumes. Vol. iii.

New York: Wm. Wood & Co.

This volume treats of Injuries and Diseases of the Muscles, Tendons and Fascia; Injuries and Surgical Diseases of the Lymphatics; Injuries of Blood-vessels; Surgical Diseases of the Vascular System; Aneurism; Injuries and Diseases of Nerves; Ijnuries of Joints. These articles are furnished in their order by P. S. Connor, M. D., Cincinnati, O.; Edward Bellamy, F. R. C. S., London, Eng.; John A. Lidell, A. M., M. D., New York; John A. Wyeth, M. D., New York; Richard Barwell, F. R. C. S., London, Eng.; M. Nicaise, of Paris and Edmund Andrews, M. D., LL. D., of Chicago, Ill., names well known in surgical literature and of national reputation at home and abroad. This tome maintains the reputa- of its predecessors and adds to the volume of information so much needed by the surgeon. From the contents noted above, the reader can form some

judgement of its contents. It is written with a comprehensiveness which comports with what is expected in an international encyclopœdia of surgery. The authors of the articles which make up the volume, are all so well known and their reputations so well settled that the reader can place perfect reliance upon what they write, and can make no mistake in following their advice, provided always his diagnosis is correct.

The publishers are deserving of the thanks of the profession for engaging in such a large enterprise, and they should be rewarded by a general subscription for the series. We advise all who are engaged in surery to place it in their libraries.

Alcoholic Inebriety. From a Medical Standpoint, with cases from Clinical Records. By Joseph Parrish, M. D.
Philadelphia: P. Blakiston, Son & Co.
Detroit: John McFarlane. Price, $1.25.

This is a very interesting and instructive book, of 182 pages and index. The author has endeavored to state principles on facts, and enforce them so far as he could from the material in his possession. He discusses his subject by asking who are inebriates. Is inebriety a disease? and under this head he describes the solitary—and the mid-night inebriate—and the latter with tendencies to special vices and to specific forms of violence—hereditary and traumatic inebriates—asylums for inebriates and how to deal with them. There is much in the book that accords with our personal observation. The author does not confine himself to stating his own views, but he fortifies himself with those of others who have given study and observation to the subject. The book should be read not only by medical men, but also by clergymen, lawyers and others engaged in literary pursuits; for it shows that in this class of persons inebriety often takes its rise in the midnight hours, when with tired nature, the clergyman undertakes to prepare an address or a sermon, or the lawyer a brief for the following day, or the poet a poem; 'tis then he is prone to hie to the bottle, in which fatigue is lost and inspiration is developed. But its reading should not be confined to professional men, but to many others in the higher and lower walks of life it is intensely applicable. We would like to see it in every home, for it cannot but induce to that which is good.

The Microscope and its Revelations. By William B. Carpenter, C. B., M. D., LL. D., F. R. S., F. G. S., F. L. S., Corresponding Member of the Institute of France and of the American Philosophical Society, etc., etc. Sixth Edition. Illustrated by 26 plates and 500 wood engravings. In two volumes. Vol. i.
New York: Wm. Wood & Co.

This is the April number of Wood's Library of Standard Authors. That the work before us has reached the sixth edition is of itself sufficient commendation. The work is a standard one, and as such can be relied upon. It contains everything pertaining to the microscope, not only as regards its construction and its varities, but also the principles upon which it is organized. The accessory apparatus needed is described; how to manage it; how to make the preparation to mount them, and how to collect them; how to examine vegetable life in its simplest forms and other fungi; the microscopic structures of higher cryptogamia, and also the structures of phanerogamic plants.

It is really a valuable book to all those interested in the use and application of the microscope. We are only sorry it cannot be had separate from the series for 1883. Of itself it is worth the cost of the series.

The publishers will receive our thanks for the copy sent us.

Fourth Annual Report of the State Board of Health of Illinois. John M. Gregory, LL. D., President; John H. Rauch, M. D., Chicago, Secretary.

This report is of more than ordinary value, as in it is given the status of the medical colleges of 32 states, from the Illinois point of view. The graduates from the Michigan medical colleges are fully recognized as entitled to practice in that state.

Non-graduates are entitled to practice, provided they can answer the questions which are propounded to them by the examining board.

All medical colleges should send to the secretary for a copy, which we know will be cheerfully sent as the urbanity of Dr. Rauch is only equaled by the interest he takes in advanced medical education and sanitary science. We expect to greet him as a member of the American Public Health Association, which meets in this city (Detroit) in November next.

Therapeutic Hand-Book of the United States Pharmacopœia. Being a Condensed Statement of the Physiological and Toxic Action, Medicinal Value, Methods of Administration and Doses of the Drugs and Preparations in the Latest Edition of the United States Pharmacopœia. (Apothecaries and Metric Systems). With some remarks on Unofficina Preparations. By Robert T. Edes, A. B., M. D., (Harvard) Fellow of the Massachusetts Medical Society; Fellow of the American Academy of Arts and Sciences; Late Passed Assistant Surgeon United States Navy; Professor of Materia Medica in Harvard University; President of the American Neurological Association; Corresponding Member of the New York Therapeutical Society; One of the Visiting Physicians of the Boston City Hospital. 1883.
New York: Wm. Wood & Co.

The title page fully describes the scope of the work. Based on the pharmacopœia it may be said to be an extension of that work. While the pharmacopœia is practically a catalogue of approved remedial agents, the book before us treats of the physiological action of the remedies, the diseases in which they are applicable and the doses in which they should be administered.

A classified index of drugs is appended and also a full index of officinal remedial agents.

Poisons and their antidotes are also appropriately given.

We cordially recommend the book to all practitioners. It is virtually the pharmacopœia applied to practical purposes.

Student Aid Lines. Aids to Medicine. Part 1 (Double Part). The General Diseases, Diseases of the Lungs, Heart, Blood-Vessels and Liver. By C. E. Armand Temple, B. A., M. B., Cantab; S. A., M. R. B. P., Lond. 1883.
New York: G. P. Putnam's Sons.

This is a continuation of the Student Aid Lines on which we have commented favorably before. We have used them in our classes for teaching purposes and found them concise and well written. Especially are they useful in reviewing the reading of more extensive text-books, of which time does not allow a second reading, but in regard to the contents of which it is, at the same time necessary to furbish up the memory. They are also very handy for the practitioner to polish himself up in points he has

not time to examine in the larger works of his profession. We decidedly commend the Lines.

The American Journal of Dental Science. Edited by F. J. S. Gorgas, M. D., D. D. S. Vol, xvii, third series, No. 1. Monthly. $2.50 per annum in advance.
Baltimore, Md.: Snowden & Co., Publishers.

A first-class dental journal.

One Hundredth Annual Catalogue of the Medical School (Boston) of Harvard University, 1882-83, with an illustrated description of the new building. Cambridge: 1883.

Annual course begins on the Thursday following the last Wednesday in September. Matriculation, $5.00; fees, $200.00 for the yearly course. Under the head of Instruction, we notice "Cookery," or Practical Instruction in Preparing Food for Infants and Invalids; six exercises. This should be taught in every medical college. The Michigan Medical College has done so since its organization.

A Clinical Study of Syphilis of the Eye and its Appendages. By Leartus Connor, A. M., M. D., of Detroit, Mich. Reprint from American Journal of Medical Science, April, 1883.

How Can We Obtain and Preserve the Best Eyesight and Hearing? A paper read before the Sanitary Convention at Greenville, Mich., April 11, 1883. By Leartus Connor, A. M., M. D , of Detroit, Mich. Reprint from Annual Report of Michigan State Board of Health.

Two exceedingly interesting pamphlets; not only well written, but practical and replete with information. To our personal knowledge the author has given the subjects of the above papers much study, and they are the results of mature examination. Send to him for a copy.

Hand-Book of Medical Electricity. By A. M. Rosebugh, M. D., Surgeon to the Toronto Eye and Ear Dispensary; Member of the International Ophthalmological and Otological Societies, etc., etc. Printed for the author.

The hand-book before us is a description of a new medical battery and how to apply it. The author is author is an enthusiast in the use of electricity, and his pamphlet may be read not only with pleasure, but also with information.

The Vomiting of Pregnancy. By William B. Atkinson, M. D. Read before the Philadelphia County Medical Society, September, 1882. Reprint from the Philadelphia Medical Journal for October.

The Biographer. May, 1882.
New York: Park Row, No. 23.

The number before us contains the brief biography of over thirty distinguished personages, also woodcut likenesses of them all. It is really an interesting publication, and we can only wish the publishers success in its issue.

The American Psychological Journal. Issued by the National Association for the Protection of the Insane and Prevention of Insanity. Quarterly. Edited by Joseph Parrish, M. D., Burlington, New Jersey.
Philadelphia: P. Blakiston, Son & Co., Publishers. 1883.

A substantial journal of over 112 pages, and devoted to Psychology. That P. Blakiston, Son & Co. are its publishers, is satisfactory evidence of its being a journal which is going to stay.

The American Chemical Journal. Edited by Ira Remsen, Professor of Chemistry in the John Hopkins University. April, Vol. V, No. 1.
Baltimore: The Editor.

An exceedingly useful and scientific journal, and should be well patronized.

Charges Made by the Indiana State Board of Health against Thad. M. Stevens, M. D., Secretary of the Board, together with answers to such charges. With an appendix containing statements offered in proof, and other matters. By Thad. M. Stevens.

The Annual Report of the Central Kentucky Lunatic Asylum, Anchorage, Ky., for the year ending October 31st, 1882. Property of the State of Kentucky.

Therapeutic Progress.

Small-Pox, Petroleum as an Ectrotic.—Dr. Kanenski states that he has obtained excellent results, even in the confluent form of small-pox, by painting the skin with a solution of petroleum in olive oil, one to three or four.—*Przeglad Lekarski*, No. 13, 1882.

Typhoid, Rectal Injections in.—Dr. Negretto uses water at 10°, and at 15°c., injecting one or two litres into the rectum which diminishes the temperature, and lowers the pulse and respirations. The injections sometimes cause abdominal pains and even rigors.—*Annali Universali*, Feb., 1882.

Typhoid Fever, Coffee in.—Dr. Guilassee, of the French Navy, finds in coffee a most valuable heart and brain stimulant in adynamic conditions. Three teaspoonfuls were given every two hours alternately with two teaspoonfuls of claret or Burgundy, a beneficial result being rapidly apparent.—*N. Y. Med. Record*, March 31.

Diarrhœa in Infants.—Dr. Lewin has found great success in the treatment of diarrhœa in young infants by giving them soluble albuminate of tannin, made by adding white of egg to a solution of tannin; the white of egg must be previously beaten up with some water.—R. Wood, M. D., in *Bulletin de Thérapeutique.*

Diphtheria, Treatment of.—Dr. Korouk, of Cologne, who considers this a purely local disease, has successfully treated it by the application of iodoform mixed with starch. He prefers, however, to use a solution of it in collodion—two of iodoform and twenty of collodion—applied about six times a day. His cures average 83 per cent., which exceeds the recoveries under other treatment.—R. Wood, M. D., in *Bulletin de Thérapeutique*, March.

Scurvy, The Prevention of.—Dr. W. H. Neale, recently in medical charge of the Eira, from a consideration of the conditions prevalent in that expedition, lays down the following suggestions for the conduct of future arctic expedions, in a communication to the Royal Medico-Chirurgical Society:

1. That the crews should spend the winter in huts rather than on board ship.
2. That there should be an abundance of albuminoid food, consisting principally of the flesh of recently killed animals.
3. That the best form of cooking the meat is in stews or hashes, to which should be added the blood of the animals killed.
4. That preserved vegetables should be added to every meal, not so much for their intrinsic value as to aid in the digestion of animal food.
5. That the presence of fresh meat renders the use of lime juice unnecessary.—*Midland Medical Miscellany*, June 1, 1883.

The Positive or Rational Treatment of Gonorrhœa.—In reply to the kindly notice of my letter on the above subject by "C. H. W.," with a request for further information, allow me to say that, regarding as I do this ailment as an inflammation due to specific causes for which there are specific remedies, I know of no earthly reason why, excepting those to which I will here briefly allude, its cure should not be reasonably expected and effected within such limits of time as are demanded for the cutting short and treatment of simple ophthalmia, &c., these several drawbacks being—first, the beastly and objectionable character of the medicines given, which effectually sicken the patient, and make him dread and refuse to take the remedies with that perfect regularity which is absolutely and essentially necessary to its early subdual; second, the utter want of sympathy manifested by most practitioners with young patients when they happen to have got into trouble of this character—a sort of holding aloof from them, which folly has the undoubted effect of driving them into the hands of druggists and advertising quacks, who lose no opportunity of cultivating the impression that medical men do not understand this class of ailment; third, the not unfrequent want of means to meet the high charges in ready money demanded by medical men (who very properly decline to allow accounts to run on with men who, being as a rule unmarried, have no settled home, and thus offer no security for payment); whilst, fourth, there always exists the possession of a consciousness that in going to the doctor they may be recognized or watched—a suspicion which haunts them, and not unfrequently deters them from that steady perseverance which is so absolute a necessity if early cure is to be expected or effected. From long experience I am certain that a single dose of medicine missed is actually detrimental to an early cure; the late Dr. Peatson, of the Manchester Lock Hospital, seldom or never failing to cut the ailment short by drachm-doses of fresh cubebs given in cold water every three hours of the waking day, and this entirely without the use of any injections. Finely ground cubebs are not very objectionable to take, excepting for their bulk, being infinitely preferable to the smallest dose of balsam or any other preparation with which I am acquainted, the much belauded alkaline solutions of balsam, buchu, &c., being enough to turn the stomach of the typical horse of which we hear so much, and certainly expensive boilings and distillations, against the purchase or use of which, from practical experience, I would warn my brethren. Now, whenever gonorrhœa patients come to me, I distinctly give them to understand that I will not undertake their cases unless they are prepared to take a bottle of medicine daily for at least two or three weeks. For this course I kindly, but firmly, give them my reasons, not the least of which are that, having before they came to me been under treatment (for medical men seldom get these cases at first hand), I will not allow them to play with me as they have done with my predecessors, nor will I give them room after a certain time of desultory trial with me to go away and tell "some other man" I cannot cure them, whilst the fault of non-cure lies entirely with themselves. For the rest, I try to give them confidence, enter into sympathy with them, arrange the method of fetching the medicine, try to meet their circumstances of payment, and thus, in ordinary cases, never fail in shortly proving to them by their steady improvement the absolute certainty of a speedy cessation of the discharge, scalding, and other evidences of an existant inflammation, which surely yield to those common-sense remedies which patients have a right to expect from the youngest qualified practitioner.

And now as to treatment. I always recommend the wrapping round the glans penis an inch wide piece of lint several inches long, held tightly on with thread, which lint I order to be kept constantly wet with cold water. This usually prevents sensitive erections, and the pain attendant on the chordee, which is so much to be dreaded. For my empiric recommendation of five-grain doses of the iodide of potash, all I can say is that, besides its solvent influence on the essential elements of the powder, I can but further refer my brethren to its well-recognized action on the various mucous surfaces, as evidenced by the discharges to be noticed very frequently from the nostrils, eyes, &c., when exhibited for rheumatism, &c.; but whatever its action in combination with full doses of cubebs, I believe it to be simply invaluable in subduing and killing the poison of gonorrhœa, and this I assert after a very extended experience of its use. Personally I do not believe that any number of cases of this ailment occurring to the same patient have the slightest influence over each other. Each case stands simply on its own merits, each one being due to the contact of fresh poison. A cure is a cure, and there is an end to the business. Protracted cases are neglected cases. A patient may have it twenty-eight days, twenty-eight weeks, or twenty-eight months, just accordingly as he proceeds to get rid of it.

With regard to your correspondent's inquiry as to whether gleet is contagious or not, I answer if gleet is, as I understand it to be, a thin, sanious discharge left after a protracted gonorrhœa—such slight discharge as is to be noticed occasionally and especially in the morning—then undoubtedly it is; and a medical man does a most monstrous thing when he recommends or allows a patient to marry or have coition with his wife while the slightest trace of any such discharge exists.—Trocar, in the *Lancet*, Oct. 7, 1882.

Cannabis Indica; a Valuable Remedy in Menorrhagia.—Mr. J. Brown, of Bacup, observes:

"Indian hemp has been vaunted as an anodyne and hypnotic, having the good qualities of opium without its evils. Also in dysmenorrhœa and insomnia it has not proved of much benefit. The drug has almost invariably produced some marked physiological effect even in small doses. Text-books give the dose as ten minims and upwards, but five minims is the largest dose that should be given at first. If bought from a good house, the drug is not inert or unreliable. A drug having such marked physiological action ought to have a specific use as a therapeutic agent. Indian hemp has such specific use in menorrhagia—there is no medicine which has given such good results; for this reason, it ought to take the first place as a remedy in menorrhagia, then bromide of potassium and other drugs. The *modus operandi* I cannot explain, unless it be that it diverts a larger proportion of blood to the brain, and lessens the muscular force of the heart. A few doses are sufficient; the following is the prescription:

℞ Tincturæ cannabis indicæ, ℥xxx
Pulveris tragac. co., ʒ j
Spiritus chlorof., ʒ j
Aquæ, ad ʒ ij. M

One ounce every three hours. Four years ago I was called to see Mrs. W., aged 40, multipara. She had suffered from menorrhagia for several months. Her medical attendant had tried the ordinary remedies without success. Indian hemp was given as above. Its action was speedy and certain. Only one bottle was taken. She was afterwards treated for anæmia, due to loss of blood. Twelve months after this my patient sent for a bottle of the "green medicine." I learnt afterwards that she had sent this medicine to a lady friend, who had been unsuccessfully treated by another medical man for several months for the same complaint. It proved equally successful. The failures are so few, that I venture to call it a specific in menorrhagia. The drug deserves a trial. It may occasionally fail; this, however, is not to be wondered at in a complaint due to so many different causes, and associated with anæmia and other cases of plethora."

Robert Batho, M. D., M. R. C. P., Castletown, Isle of Man, writes in reference to the same subject: "Considerable experience of its employment is men-

orrhagia, more especially in India, has convinced me that it is, in that country at all events, one of the most reliable means at out disposal. I feel inclined to go further, and state that it is par excellence the remedy for that condition, which, unfortunately, is very frequent in India.

I have ordered it, not once, but repeatedly, in such cases, and always with satisfactory results. The form used has been the tincture, and the dose ten to twenty minims, repeated once or twice in the twenty-four hours. It is so certain in its power of controlling menorrhagia, that it is a valuable aid to diagnosis in cases where it is uncertain whether an early abortion may or may not have occurred. Over the hæmorrhage attending the latter condition, it appears to exercise but little force. I can recall one case in my practice in India, where my patient had lost profusely at each period for years, until the tincture was ordered; subsequently, by commencing its use, as a matter of routine, at the commencement of each flow, the amount was reduced to the ordinary limits, with corresponding benefit to the general health. Neither in this, nor in any other instance in which I prescribed the drug, were any disagreeable physiological effects observed.

I could say a few works in its favor, as to its action in allaying irritative cough, but I prefer confining myself to a point on which experience has left me no room for doubt."—*British Med. Jour.*

Remarks on the Therapeutic Uses of Oleates.—About 1811, Chevreul* discovered oleic acid, and soon afterwards notices of the chemical and pharmaceutical qualities of medicinal oleates were published in France.† Professor Attfield's is the first English paper on the subject, and it was published twenty years ago.‡ From this time, I know of no other publication on the use of oleates until the appearance of Mr. John Marshall's well-known paper in 1872. Since that date, many papers have been published on the chemistry, pharmacy and therapeutics of oleates, and various methods of preparation have found favor. In 1879 I recorded my experience of the use of oleate of zinc in the treatment of eczema, and in the same year I published some remarks on the employment of oleate of lead in the cure of that affection.§ I used an ointment of oleate of lead prepared according to the following formula: lead oleate 24 parts, heavy and inodorous paraffin oil 14 parts. The lead oleate was prepared by heating a mixture of oleic acid and oxide of lead. I found this ointment a very reliable local application in cases of subacute and chronic eczema, when conjoined with the employment of suitable general therapeutic and hygienic measures. A few months ago, Dr. Shoemaker, of Philadelphia, read an important paper before the Medical Society of Pennsylvania, on the preparation and uses of oleates.¶ He claims to have introduced, for the first time, the use of chemically true oleates, in contradistinction to those previously prepared by the direct union of the acid with the base, with or without heat.

The new oleates are obtained by the double decomposition of sodium oleate with solutions of neutral salts, the sodium oleate being prepared by the saponification of oleic acid with a solution of sodium-hydrate. A solution of the sodium oleate in eight parts of water is precipitated by a neutral salt, and the precipitate, washed and dried, is the oleate required.

Messrs. Southall, the well-known pharmacists, have prepared various oleates according to Dr. Shoemaker's directions, and some of these, namely, the oleates of lead, zinc and copper, I have examined and tested in practice. The new oleates present the great advantage, which practitioners will at once appreciate, that they can be used as dusting powders as well as in the form of ointments, so that they may be employed in those troublesome acute and discharging affections of the skin in which greasy preparations of any kind cannot be borne. Zinc oleate, which is a fine pearl-colored powder, with a soft-soapy feel, like powdered French chalk, or lead oleate, may be used alone as a dusting powder for the skin, or it may be so used diluted with powdered starch. One drachm and a half or two drachms of either of these oleates, mixed with an ounce of petroleum jelly or benzoated lard, makes a good ointment, which I have found efficient in cases of subacute and chronic eczema. Dr. Shoemaker has introduced oleate of copper as a remedy for ringworm. I have used it in the form of ointment, of the strength of one drachm and a half of the oleate to six drachms and a half of petroleum jelly, in some mild cases of ringworm, with excellent result.—James Sawyer, M. D., M. R. C. P., in the *British Medical Journal*, February 10, 1883.

Subcutaneous Injection in Puerperal Convulsions.—Some years ago, I published two cases of puerperal convulsion cured by the subcutaneous injection of morphia with tincture of aconite and solution of atropia; and in 1874, I cured another case by the same means. I think, however, the present case will prove the efficacy of the remedy still more strongly.

I was sent for to attend L. P., æt. 29, a primipara, at 1 A. M., on June 12th, 1882. Her legs were œdematous; her urine contained a trace of albumen. There was œdema also of the labia, At 11:15 A. M., she was delivered of a male child. I left soon afterwards, as everything appeared to be satisfactory. At 3 P. M., her husband called to say that his wife was suffering from severe headache and sickness. I sent a saline bismuth draught, which at once relieved her. At 4 P. M. I was hastily summoned, as she was reported to have a fit. On my arrival, I found her in strong convulsions, frothing at the mouth. The fits continuing one after another, I injected into her arm half a grain of morphia, two minims of Fleming's tincture of aconite, and two minims of liquor atropiæ. This had the effect of slightly diminishing the fits; but they continued. After half an hour I repeated the injection. The fits immediately ceased, and she fell into a sound sleep. At 11 P. M. I saw her again; she was sleeping and perspiring freely. As she had not passed urine, I introduced a catheter and drew off a pint. The lochia had ceased. On the 13th, at 9 A. M., she had slept all the night, and was still inclined to sleep, but quite sensible. At 3 P. M. she was sensible and asked for something to eat. Pulse 120; temperature 104°. She had passed urine freely, but it was most offensive to the smell. The lochia had appeared slightly. At 10 P. M., pulse 110; temperature 101°. She had taken freely of support, but was rather restless. I gave her a draught of chloral hydrate with bromide of potassium. On the 14th, she had passed a tolerable night. The lochia were now profuse. I gave her a minim of tincture of aconite every hour, which caused her to perspire freely. Her bowels were relieved by castor oil. After this she continued to improve; and on the 16th, I gave her a mixture of quinine. On July 3d she was convalescent and able to sit up. The urine was natural. She is naturally delicate, having lost two sisters in childbirth; and the whole family are consumptive.

I publish this case with the hope that other medical men will try this treatment, and be able to write as favorably as I have done. In all my cases, the injection has acted like magic. I made the injection

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* Recherches sur les Corps Gras.

† Squibb's Ephemeris of Materia Medica.

‡ "On a Method of Dissolving Alkaloids in Oils," Pharmaceutical Journal, 1862-63, vol. iv., p. 388.

§ "Oleate of Zinc in the Treatment of Eczema," British Medical Journal, April 19th, 1879; "Notes on the Treatment of Eczema," the Practitioner, November, 1879; "Oleate of Lead in Eczema," British Medical Journal, May 29th and June 19th, 1880.

¶ The Medical Bulletin, July, 1882. An excellent summary of Dr. Shoemaker's paper appears in the Pharmaceutical Journal, October 14th, 1882, under the following title: "The Oleates and Oleo-palmitates in Skin-diseases."

in 1868, and its effects are as good as ever.—R. M. Bowstead, M. D., in the *British Medical Journal*, July 15, 1882.

Position in the Treatment of Diseases.—In the treatment of cases of bilious vomiting, I have found attention to position a very important element. I place all patients suffering from this complaint on the right side, in order to facilitate the exit of the contents of the stomach through the pyloric orifice. This treatment alone, in many cases, suffices to stop an attack; and, combined with the usual remedies, it is very successful. The same position is also good in threatened attacks of the passage of gall-stones, which may thus sometimes be averted, presumably by the action of gravitation upon the dislodged stones. The question of position is, in fact, in my opinion, an important one to study in the treatment of various affections and natural processes. Much has been written, for instance, about the position to be insisted upon in the several complications of midwifery practice; but great difference of opinion still prevails as to the best position for natural labor. As securing the greatest amount of ease and "purchase" to the parturient; the greatest facilities for the expulsion or extraction of the placenta; the least risk of hæmorrhage; and the facilities afforded for the application of the forceps and manipulations generally, I prefer the kneeling posture.

After parturition, the question of displacements of the uterus, and their prevention, has to be considered. I am led to believe that retroversion is caused, not so much by "getting up" too soon after labor, as by continually lying upon the back. I take care to caution patients against the adoption of that position for some time after labor, and invariably allow them to rise as soon as they feel able to walk.

Position may also be studied with advantage in the third stage of a pneumonia, to facilitate discharge through the bronchi; in phthisis, also, in the emptying of vomicæ.

Having for many years been of opinion that incubus is due to venous congestion of the cerebellum and medulla, caused by lying upon the back for a length of time during sleep, I advise that vigorous efforts should be made by the patient to turn the head, if only slightly, upon one or other side; and thus allow the delayed venous current a free passage from the torcular herophili to the jugular fossa of that side.

A great deal might be said in reference to this subject, in its bearings upon other departments of medicine. What I have written, however, may suffice to indicate the desirability of a thorough ventilation of opinion upon it.—C. R. Illingworth, M. B., in the *British Medical Journal*, July 15, 1882.

Medical Bravery.—The following generous recognition of the bravery of two medical officers in Egypt is from the Philadelphia Medical News of 14th October: "The engagement at Kassassin, in the recent Anglo-Egyptian war, afforded two illustrations of the bravery of the army medical officers which are worthy of being recorded, especially as in the English army the surgeons are classed as 'non-combatants,' and are persistently denied their proper rank and recognition. The only officer who was killed on this occasion was Surgeon-Major George Shaw, who, for the purpose of rendering assistance to a wounded man, voluntarily exposed himself to a scathing fire from the enemy. He was struck in the temple by a rifle bullet, which penetrated and lodged in the brain, and lived only about three hours in an unconscious state. During the same engagement some movement of the troops left the first company of the Army Hospital Corps in an isolated and dangerous position. The medical officer in charge refused to permit the work of dressing the wounded, many of whom needed instant attention, to be intermitted for a moment, and declined to make any change of position until that duty had been attended to. His men, some forty in number, accordingly filled their haversacks with sand, so as to form temporary breastworks, took the rifles of the wounded who were unable to use them, and defended their charge until the arrival of the cavalry terminated the enemy's attack. These facts are obtained, not from the columns of the London daily press, nor from the illustrated weeklies, which are filled with descriptions and representations of the heroism of the Household Cavalry and the valor of the troops in general, but from modest notices in the correspondence of one or two medical journals. So far as we have seen, the lay press has had no word of commendation for the men who, relegated officially to an inferior social and military position, without the stimulus of the tremendous excitement of the officers who make or mar the game of war, and with little or no prospect of sharing the honors in the event of success, thus coolly and unflinchingly risk and lose their lives in the performance of their duty, not only upon the field of battle, but in confronting and combating disease in its manifold shapes. We have no wish to detract from those soldiers who have so well acquitted themselves during the recent campaign, but truly brave men can afford to give honor wherever and to whomsoever it is due. We should have been glad to see some mention of the medical department in the despatches, or some allusion to it in the encomiums upon the army with which the English press is now filled."—*Edinburgh Med. Jour.*, Dec., 1882.

Boracic Acid in Diphtheria.—I find in the report of the Clinical Society, published in the Lancet of November 18th, a record by Dr. Goodhart, of six cases of diphtheria treated by the local application of borax and boracic acid, with an amount of success which had not as yet been established, as far as he knew. Dr. Goodhart says "both borax and boracic acid have been occasionally in use as a topical application in diphtheria, doubtless, for a long time, but not, so far as is known, with any decided success." I regret to have to challenge Dr. Goodhart's statement as to the success of the remedy, and must refer him to my communication which appeared in the Lancet of February 15th in this year, where I advocated the use of boracic acid as a specific in diphtheria, when resorted to in the early stages of the disease. During the past ten years I had exceptional opportunities of watching its effects in over a hundred cases of diphtheria, and more especially during the epidemic which occurred some few years ago in this district, and which the editor of the Lancet must well remember from the controversy we then had as to the number of deaths which occurred within the district. Upon that occasion I treated seventeen cases during one week with the boracic acid application—all recovered; and throughout the epidemic I lost one only—namely, a child four years old, who dropped dead whilst playing with its toys in bed some few days after all the symptoms of the disease had disappeared. During the same epidemic ten children of various ages died in the district, none of whom had been treated upon my plan. So great has been the success of the boracic acid treatment in diphtheria in this neighborhood, that it is as well known as Fowler's solution is for ague; and I can safely state that there is more boracic acid used medicinally in this part of the country than in any county in England. Not that we have been troubled for some long time past with diphtheria, but the remedy is so well known that upon the advent of throat affection, irrespective of its nature, the public immediately resort to it.

Dr. Goodhart speaks of the application "loosening, dissolving and preventing the reformation of membrane." From repeated experiments with the membrane placed in solutions of various strengths of boracic acid and glycerine at 100° F., I have not found any sign of its being dissolved after exposure to its action for twenty-four hours, therefore I ven-

ture to substitute the term detach for dissolve, used by Dr. Goodhart.—T. D. Harries, F. R. C. S. Eng. (Exam.), in the *Lancet*, Dec. 9, 1882.

Peroxide of Hydrogen in Ophthalmic Disease.—The excellent paper by Mr. Kingzett, in the Journal of December 2d, on the uses and applications of the peroxides in medicine and surgery, is full of interest to surgeons, as we are now becoming more and more alive to some of the disadvantages of carbolic acid, both to patient and surgeon; and I certainly shall extend my trial of the peroxide of hydrogen into the region of general surgery. The paper referred to contains no allusion to its use in cases of purulent discharge from the conjunctiva; and it may be gratifying to Mr Kingzett to know that M. Landolt of Paris has been using it with great success, in these cases, for nearly a year. Having seen its application on my visit to Paris in May, I determined to use it myself, and have done so, more or less, ever since, with very excellent results; and the only reason why I have not published the matter systematically, has been that I have been expecting M. Landolt to send us a communication on the subject, and I was anxious not to forestall him. My belief is, that it will prove a most useful adjunct to our present mode of treating severe purulent ophthalmia, if it do not altogether replace it.—James E. Adams, in *British Medical Journal*, Dec. 9, 1882.

Erythema Simplex.—A. M., 30 years, Irish, and employed as a cook in one of our hotels. She is constantly bending over a hot range, owing to her occupation, and some weeks ago noticed that the redness of the face, which had previously disappeared after a time, began to remain longer. Presently it became so bad as not to leave at all, and gave rise, in addition, to burning, smarting, and more or less itching. The redness, as you have seen, involves pretty much the whole face, not, however, producing a uniform discoloration. The redness is in patches, which coalesce with each other, leaving a ragged margin. By passing the finger over the surface the patches are found to be very slightly raised, and the redness disappears, returning again instantly upon removing the pressure. It is a case of erythema simplex, or superficial inflammation of the skin, from external irritation. In the way of treatment, removal of the exciting cause is the primary object. In all idiopathic cases it is the one thing to do. If we can get the patient's coöperation in this, we will order her a simple oxide of zinc ointment, with possibly a few drops of carbolic acid.—Clinic of Dr. F. Le Sieure Weir, reported in *Med. and Surg. Reporter.*

Composition of Iodia.—G. W. S. & Co., Lucas, Ia.: The manufacturers pretend to publish the formula for this preparation by saying that it is a combination of active principles obtained from stillingia, helonias, saxifraga, menispermum, aromatics, iod. potas., and phos. iron. This is mere chaff, and the "inventor" must be classed with the great army of patent medicine manufacturers. Any physician guilty of prescribing such a nostrum ought to hide his face in shame; for every such prescription is a written confession of his inability, an acknowledgment that the author is unable to combine the ingredients mentioned, in proper proportions.

Kilner's Formulary gives the following directions for preparing "Iodia."

℞ Potassium Iodide.....256 gr.
Fld. Ext. Stillingia.....3 fl. oz.
Fld. Ext Prickly Ash.....1 fl. oz.
Fld. Ext. Saxifrage.....4 fl. dr.
Fld. Ext. Yellow Parilla.....4 fl. dr.
Fld. Ext. Blue Flag.....4 fl. dr.
Dilute Phosphoric Acid.....4 fl. dr.
Iron Pyrophosphate.....256 gr.
Water, hot.....2 fl. oz.

Dissolve the pyrophosphate in the water, dissolve the iodide in the fluid extracts; mix the two solutions, add the acid, and allow to stand for twenty-four hours before filtering.—*The Druggist, Chicago, Ill.*

Sulphurous Acid in Scarlatina.—Three years and a half ago, I had about thirty cases of scarlet fever among the children of the soldiers quartered at Kingston, Surrey. All the cases were treated with diluted sulphurous acid internally. Externally, they were sponged over daily with warm water; as the feverish symptoms and rash declined, their bodies were rubbed over with sulphur ointment, to prevent the scurf particles from flying about the room, as well as to destroy their vitality. I forget, at present, who is the author of this latter suggestion. Sulphur was also burned frequently during the day, under the bed and in different parts of the room. All the cases did well. Two or three cases of dropsy occurred, from carelessness in letting the children play about in draughts too soon.

I have treated many cases of scarlet fever, during thirty years, in various ways; but no series of cases ever did so well, or gave less cause for anxiety, than these.—C. M. Jessop, M. R. C. P., in *Brit. Med. Jour.*, Feb. 24, 1883.

The Mechanical Treatment of Neuralgia.—The author (Dr. E. Rasori) uses the tuning-fork in the treatment of neuralgic pains, applying its virbrating over the course of the painful nerves. He reports the experiments of Boudet, who, by means of the tuning-fork, could check a neuralgia for some time. Boudet used the instrument in accordance with the ideas of Granvill, who thought the neuralgia consisted in a peculiar vibration in the nerve trunk, to induce different vibrations in the painful nerves. He mentions many other experiments from Bal, of Paris, and Renzer and Growers, of London, where the application of the instrument was of benefit.

The instrument was applied for from twenty to forty minutes, when the patient was relieved without further treatment. During the neuralgic attacks, one of the women had suffered from vomiting, but after the relief from the application, she was troubled no more in this way.—*Bollettino della Societa Hancisiana, Roma.*

French Journalism and "American Quackery."—In the Union Médicale for April 17th we find brief abstracts of two articles that appeared in the THERAPEUTIC GAZETTE for September, 1882. One of them is by Dr. Brewer, describing the physiological effects of manaca, and the other by Dr. Pepper, recounting a case of acute rheumatism in which the same drug was used with success after the failure of guaiacum, salicylic acid, bromide of potassium, and hypodermic injections of morphine. An individual who signs himself "L. D." adds this query: "*Serions-nous en présence d'un succédané de l'acide salicylique ou bien seulement d'une tentative d'* american Quackery?"

We would suggest to that exquisite satirist that, if he must bring in English phrases, it would be just as well to write them correctly, beginning the word American with a capital letter, and the word quackery with a small letter. We would also observe that the page which succeeds that in which he indulges in his elaborate sneer is wholly taken up with an article headed "*à propos de la suralimentation,*" in which the author, one "M. le docteur de Serviéres, ancien interne des hôpitaux," sings the praises of *lapeptone phosphatée* (*vin de Ravard*) in a disguised advertisement.—*N. Y. Med. Jour.*, May 12, 1883.